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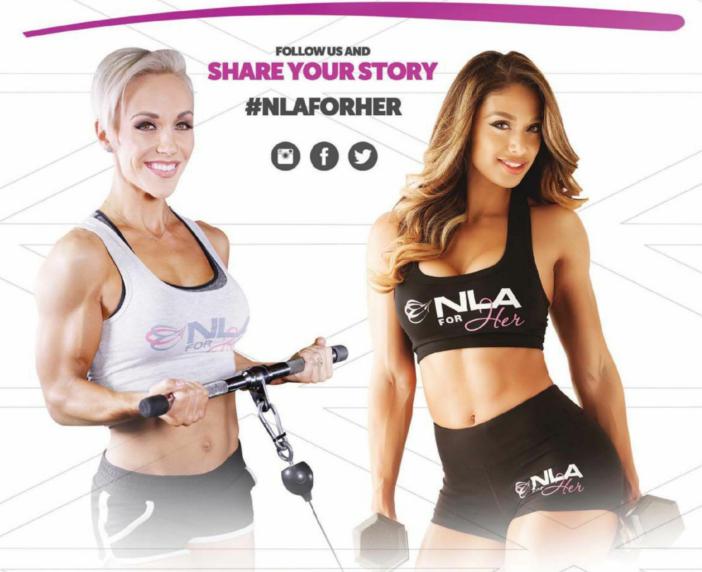
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FitRx inside PEEK

BY ELYSE BLECHMAN AND JENNIFER BLECHMAN-TURNER

CO-PUBLISHERS



NEW YEAR SPECIAL

Achieve Your Best Body in 2016!

The first issue of the new year is one of our favorites to put together. There is just something so refreshing about January 1- it's truly a brand new start; a chance to improve and really make a change for the better in the months ahead. Let's face it— no matter what we accomplished in the prior year, there is always room for improvement. And the truth is, you have it in your power to achieve exactly what you want to accomplish in 2016.

So, how will you make this year different? What do you want to achieve? Can you do more to reach your full potential this year? All it takes is a clear plan and dedication to reach the training and health goals you set out for yourself. So, use the new year as a motivator to reaffirm your fitness and health goals, or make new ones altogether—then get to work to make them a reality without excuses. We're here to help you along the way!

We are starting out our first issue of the new year with three-time Bikini champion Ashley Kaltwasser on our cover, because one look at Ashley's lines, conditioning and athletic curves, and you know she's put in the sweat to sculpt that award-winning physique. To get in YOUR best shape this year, check out Ashley's training program in "Bikini Olympia Champion Workout with Ashley Kaltwasser- Four Week Program: Get in the Best Shape of Your Life!" by Jaime Baird on page 44. This comprehensive training program, designed by Ashley and inspired by her preparation for the 2015 Bikini Olympia, is a full week of effective workouts that will produce results. Plus, included is an easy-to-follow nutrition program that can be tailored to your needs and likes while also helping you lose fat. There is no better way to start off 2016 right than with this champion workout and diet program—all you need to do is think and train like a champ.

If you really want to improve your physique this year or just need an additional challenge to stay on track, then be sure to check out "Tight and Toned Abs and Glutes with IFBB Bikini Pro Anya Ells" by Lisa Steuer on page 60. The workouts in this program will help you start off the new year right because they include compound movements that engage the entire body. There are also supersets to really increase the burn and get your heart rate up— helping you to burn more calories while improving muscular endurance. Plus, this program also includes high-intensity interval training so that you can get lean without sparing muscle, as well as Anya Ells' top tips for building abs and glutes. Get ready to get tight and toned!

Building strong, sculpted shoulders is not easy, but it can be done if you're willing to work. In "Shoulder Sculpt for 2016: Quick and Intense Volume Shoulder Workout with IFBB Bikini Pro Tawna Eubanks" on page 66, we've got your guide for sculpting sexy shoulders for the new year. The good news is that even though it takes dedication to build a strong upper body, you don't have to spend hours in the gym. This program includes the most effective exercises for hitting all parts of the shoulder, and it's fast and intense—meaning if you're willing to put in the work, you will see results!

The rest of the issue is packed with the latest scientific, cutting-edge research on fat burning, nutrition, training and even more tips for getting in your best shape in 2016. You've got all the tools you need to get that toned, lean body you've always wanted, and now it's just up to you to put in the work!

We wish you all the best this year as you work hard toward your goals. We're always here to help if you need some motivation or a new workout to change things up. From all of us at FitnessRx, happy new year!

Elyse & Jennifer



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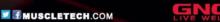
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LETTER OF THE MONTH

STRONG, SHAPELY LEGS

My friend is one of "Jessie's Girls" and has been telling me about Jessie Hilgenberg for a while. So I was excited to see the feature on Jessie in the December issue to learn a little more about her myself ["Strong, Shapely Legs with IFBB Pro Jessie Hilgenberg," December 2015]. This is a tough workout but so awesome! I'm now a big fan of Jessie and am looking into becoming a "Jessie's Girl" myself! Thank you so much for profiling such a beautiful, smart woman who really trains hard and knows what it takes to get in ultimate shape!

Olivia Ellis Email

Fmail

THE HOURGLASS WORKOUT

Thank you for the workout with Courtney King in the December issue ("Hourglass Workout: Create Sexy Curves By Adding Shape to the Shoulders, Legs and Butt," December 2015). My schedule tends to be really hectic, so I prefer workouts that allow me to achieve more in less time. Total body workouts seem to work well for me, so thanks for including a workout that hits every area I want to improve! I really feel that I'm making improvements and am on my way to my own hourglass figure!

Jessica McGraw

BANDS AND

I usually always gain weight over the holidays- between my extremely busy schedule and enjoying extra treats, it seems inevitable every year! But this year I vowed to do something different- and the December issue of FitnessRx for Women really helped me to achieve my goal! One of my favorite workouts in the December issue was the band workout with Stephanie Mahoe ["Bands and Bodyweight Booty Workout: Build Your Backside Anywhere, Anytime," December 2015]. What I loved about this program is that it was so easy to do right from home without having to worry about getting to the gym. I think this really was a key reason I was so successful with sticking with it and not putting on any extra pounds during the holidays! Thanks so much, and I can't wait to take things further with my fitness and FitnessRx in 2016!

> Sarah Golliday Email

PLYOMETRIC PROGRESSIONS

I'm a big fan of plyometrics because they are challenging and effective. But sometimes, the same moves can get boring! So it was great to see the plyometric article with Ashley Kaltwasser in FitnessRx ["Plyometric Progressions: Increase Fat Burn and Intensity with These Advanced Circuit Workouts." December 2015]. These moves are insane- they really get my heart pumping and are just what I needed to help challenge myself further. I was amazed that on a lot of these moves, just a few simple tweaks can really increase the intensity! Thanks for always challenging me and helping me to change things up in my workouts!

> Cassandra Dey Email

12-MINUTE HIIT

Thanks for the article on 10-20-30 training ["The 12-Minute HIIT Workout," December 2015]! This is such a unique approach to training, and what I like about it is that it seems to be effective without being too overwhelming. I have begun to implement this type of training in my runs and I'm thinking about trying it with other forms of cardio as well. Thank you for the great idea!

Anna Holland

CORRECTION

In the December issue of FitnessRx for Women, the wrong clothing credits were listed for cover model Jessie Hilgenberg. On the cover, Jessie is wearing leggings and a sports bra by Onzie. We regret the error









Send us your comments!

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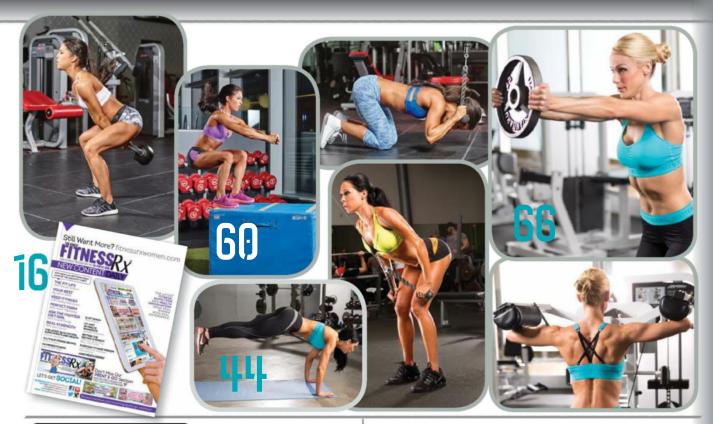


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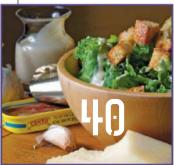
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THE LATEST NEWS AND RESEARCH FROM THE WORLD OF FITNESS



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WINTER BEAUTY; NEW RE-SEARCH IN SKIN HEALING

BY STEVE BLECHMAN AND THOMAS FAHEY, Edd

KETTLEBELL ROUTINE COULD DEVELOP

ENDURANCE AND STRENGTH

■ The physiological responses to a high-intensity, kettlebell interval training routine developed by Brian Williams and Robert Kraemer from Southeastern Louisiana University should build endurance and strength. The routine is a 12-minute kettlebell workout that uses a Tabata regimen- repetitions of 20 seconds of kettlebell exercises followed by 10 seconds of rest. The kettlebell exercises in the circuit were the sumo squat, swing, onearm clean and press, and sumo

deadlift. The responses to the kettlebell circuit were similar to a time-matched, interval-training workout on a stationary bike. Caloric expenditure and heart rate were similar between workouts. The study expanded our view of high-intensity exercise. A highintensity kettlebell circuit can substitute for high-intensity interval training workouts on a stationary bike or elliptical trainer. (Journal



■ Heat or cold can reduce post-exercise muscle pain—according to a study led by Jerrold Petrofsky from Loma Linda University, and co-workers. Intense weight training, particularly involving eccentric muscle contractions (lengthening contractions), can trigger delayed-onset muscle soreness (DOMS). Examples of DOMS-producing exercises include negatives, almost any freeweight exercise and downhill running or hiking. Small ruptures in the muscle tissue, which releases calcium and triggers an inflammatory response that promotes healing, cause it. Muscle soreness and stiffness gets worse for several days before it subsides. DOMS decreases performance and makes it difficult to train for several days. In the study, 100 test subjects performed squats for 15 minutes. Heat or cold was applied immediately after exercise or after 24 hours. Heat or cold promoted strength recovery compared to no treatment. Cold was superior to heat for reducing pain. Researchers concluded that heat or cold could prevent post-exercise pain and muscle damage. Other studies have questioned the use of cold for injured muscles because cold decreases inflammation, which is critical for tissue repair. (Journal Strength and

AEROBICS INTERFERE With Strength Training

■ Most recreational athletes combine aerobics and strength training so that they can develop well-rounded fitness and not spend too much time in the gym. A Brazilian study showed that the order of training was important for optimizing strength performance. Performing either treadmill or stationary bike exercise prior to strength training decreased the quality of the strength-training workout, with the stationary bike causing a greater decrease than the treadmill. Train for strength first and then practice aerobics. In other studies, Japanese researchers found that practicing aerobics after strength exercises was healthier for blood vessels. (Journal Strength Conditioning



Is **FIVE SETS**

■ In beginning weight trainers, most studies show that one set is as effective as multiple sets for increasing strength and power. However, this is highly controversial. Critics say that most of these studies were poorly controlled, and didn't pay close enough attention to the intensity of the training programs. A Brazilian study using untrained young men found that five sets per weight-training exercise was superior to one or three sets in several measures of strength. during a six-month training program. However, at the beginning of the study, the five-set group was markedly stronger than the other groups, even though the test subjects were randomly assigned to training groups. Training studies are notoriously difficult for researchers. In assessing the practical significance of training studies, we must consider factors such as the training levels of the test subjects, unintended bias in the research design and the supervision of the training sessions. (Journal Strength Conditioning Research, Published Online January 2015) >>>

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Lauren is an NPC bikini competitor, mother of three and a full-time registered nurse.

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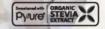
*Chocolate has 11g of Carbs



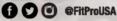








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Lauren Ricks, RN Mother of 3 / NPC Bikini Competitor

CIIPRO.

HIIT **BENEFITS EQUAL** TO MODERATE-**INTENSITY TRAINING**

■ Less is more when it comes to high-intensity training- according to a study led by Gordon Fisher from the University of Alabama at Birmingham. Six weeks of high-intensity interval training (HIIT) or moderate-intensity training (MIT) in overweight, collegeaged men produced equal improvements in body com-

position and heart disease risk factors. **MIT triggered** greater changes in aerobic cycling at 55 to 65 percent capacity but HIIT caused greater increases in power output, indicating that HIIT produced greater improvements in functional fitness. HIIT involved four sets of 30 seconds of intense exercise plus rest on a stationary bike (20 minutes 10(10): e0138853, 2015)

total), while MIT involved 45 to 60 minutes of stationary of maximum effort. Both forms of exercise produced positive changes in fitness, body composition and heart disease risk factors. HIIT produced the changes in half the time, but at higher exercise intensities. (PLOS ONE,

LOW-INTENSITY INTERVAL TRAINING WITH BLOOD **FLOW RESTRICTION INCREASES AEROBIC** CAPACITY AND STRENGTH

■ Weight training with low loads and restricted blood flow, a technique called Kaatsu training, increases strength and is particularly valuable during rehabilitation. A study led by Mariana Oliveira from the Federal University of Santa Catarina in Brazil found that four weeks of low-intensity interval training (30 percent of max) on a stationary bike combined with blood flow restriction increased aerobic capacity, power output and knee extension strength. Other groups in the study practicing high-intensity interval training (100 percent max) with and without blood flow restriction increased aerobic capacity but not strength. Interval repetitions increased progressively during the four-week study from 10 x 120 seconds to 16 x 120 seconds with 60 seconds of rest between intervals. Researchers restricted blood flow with large cuffs on each thigh inflated to 180 millimeters of mercury. The study used relatively untrained collegeaged students, so it is not clear whether this technique will work with well-trained athletes. (Scandinavian Journal of Medicine & Science in Sports, published online September 15, 2015)

NEUROMUSCULAR FUNCTION IMPAIRED FOR 48 HOURS AFTER SQUATS

■ The squat is a critical exercise for power athletes. Christian Raeder from Ruhr University in Germany, and colleagues, found that neuromuscular fatigue was evident for at least 48 hours after a squat workout. Young men performed four different intense squat workouts: traditional squats, eccentric squats, flywheel squats and plyometric squat jumps. The immediate metabolic load was greatest during flywheel and eccentric squats. All programs caused neuromuscular fatique for at least 48 hours after exercise, as measured by several jumping tests. Maximum isometric force decreased for one day but recovered after that. The lesson for power athletes is not to do heavy squats in the days before competition.



A study led by TaeHo Kim from Yonsei University Wonju College of Medicine in Korea is a bad example of a scientific paper in exercise physiology. In the introduction, the authors discussed the value of walking as a beneficial exercise for preventing obesity, high blood pressure, type 2 diabetes and premature death. Then they presented data on physiological changes during a 100-kilometer (62 miles) walk, which is not typical of recreational walkers. For some reason, they examined IGF-1 and IGF-binding protein, which are important in protein and fat metabolism. The walk caused extreme biological stress, as suggested by large changes in liver enzymes, blood sugar and blood fats. Plasma volume (blood liquid) decreases by 15 to 20 percent during such arduous exercise, which concentrates blood chemistry values. The researchers didn't measure plasma volume, so their blood chemistry values are worthless. This could have been an interesting study, had they developed wellformed hypotheses and used appropriate methods. Studies like these help explain the disdain many people have for scientific research.

(Journal of Lifestyle Medicine, 5: 21-25, 2015)



N. P.





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BY STEVE BLECHMAN AND THOMAS FAHEY, Edd

Drinking Water Before Meals **Promotes Weight Loss**

An easy way to lose weight is to drink a pint of water before major meals- according to a study led by Helen Parretti from Oxford University in the U.K. Thirty minutes before each major meal, people drank a pint of water (water group) or imagined their stomachs were full (think group). After 12 weeks, the water group lost 5.3 pounds and the think group lost 2.6 **pounds.** Drinking water before meals is a simple, safe and effective way to lose weight. Weight loss from drinking water before meals three times a day was similar to that achieved with commercial weight-loss programs. It is not known if pre-meal water consumption will cause long-term weight loss. (Obesity, 23: 1785-1791, 2015)



REGULAR EXERCISE **MAINTAINS DAILY CALORIC EXPENDITURE** AFTER WEIGHT LOSS

■ More than 66 percent of Americans are obese or overweight. Obesity increases the risk of heart disease, stroke, back pain, poor metabolic health and premature death. A recent Gallup poll found that 51 percent of Americans want to lose weight, while only 26 percent are making a serious effort to do so. Weight maintenance is extremely difficult. Ninety-five percent of people who lose weight will gain it back again within a year. One reason for this is that metabolic rate slows after weight loss, making it extremely difficult to maintain the losses. An important study led by Gary Hunter from the University of Alabama at Birmingham showed that aerobic or resistance exercise helps maintain metabolic rate after weight loss. Researchers studied physically inactive, obese middle-aged women who lost an average of 25 pounds. One group did aerobics, another group lifted weights, while another was sedentary. The exercise groups, particularly the resistance trainers, were able to maintain metabolic rate (calorie burning) after weight loss, which is extremely important for preventing weight regain. (Medicine Science Sports Exercise, 47: 1950-1957, 2015)

High-Intensity Interval Training

High-intensity interval training (HIIT) involves repeated repetitions of high-intensity exercise lasting 10 to 120 seconds, followed by rest or reduced exercise intensity. HIIT produces rapid improvements in endurance, maximal oxygen consumption, glycogen storage and muscle cell mitochondria (cell powerhouses) in less time than traditional exercise training. Its effects on obesity and weight control are not totally understood. Aaron Sim and colleagues from the University of Western Australia found that HIIT practiced for 12 weeks reduced appetite in overweight, inactive men better than continuous exercise. The HIIT program consisted of repeated bouts of exercise on a stationary bike for 15 seconds at maximum intensity, followed by one minute of rest. Traditional training involved 30 to 45 minutes of continuous exercise on a stationary bike at 60 percent effort. Appetite was assessed during test meals. The HIIT group showed improvements in appetite regulation during the test meals, while there were no changes in the traditional exercise group or controls. HIIT also improved blood sugar regulation. HIIT is a good training method for weight control and management of insulin sensitivity. (Medicine Science Sports Exercise, 47: 2441-2449, 2015)

MELATONIN **HELPS CUT FAT**

Melatonin is a hormone produced by the pineal gland in the brain that promotes sleep. It is produced cyclically in response to darkness and light. Supplementing melatonin might promote weight control- according to the results of a study on mice by Italian researchers. Lean and obese mice were given melatonin or a placebo in their drinking water for eight weeks. Melatonin reduced weight, fat storage area and reversed fat tissue enlargement in the obese mice, but not the lean mice. It worked by decreasing inflammation and normalizing adipokines, which are important fat-signaling chemicals. It also activated brown fat and enhanced energy expenditure. Melatonin supplements help promote sleep and weight control. (Nutrition Research, 35: 891-900, 2015) >>







DAIRY FOODS BUT NOT CALCIUM SUPPLEMENTS PROMOTE FAT LOSS

■ Several large population studies found that dairy food consumption was linked to lower body fat. As expected, the dairy industry jumped on these findings to promote their products. These studies didn't find that eating more dairy foods will make people thinneronly that dairy consumption is related to lower body fat. Alison Booth and colleagues from Deakin University in Australia performed a meta-analysis that pooled the results of studies on the effects of dairy consumption and calcium supplements on bodyweight and body composition. Calcium supplements had no effect on weight or fat loss. Dairy consumption as part of a reduced-calorie diet, on the other hand, caused fat loss but not weight loss. The researchers concluded that in the short term (four months), including three daily servings of dairy might promote fat loss. (British Journal Nutrition, 114: 1013-1025, 2015)



During the past 35 years, nutritional experts have advised people to cut down the amount of fats they consume. The origin of this recommendation was the United States Senate Select Committee on Nutrition and Human Needs Committee chaired by former U.S. Senator George McGovern (1968 and 1977). This productive committee established reduced intake of fats and increased consumption of carbohydrates as national goals. Americans took this advice to heart, and obesity rates went through the stratosphere. Deirdre Tobias and co-workers from Brigham and Women's Hospital and Harvard University conducted a meta-analysis that pooled the results of 53 randomized trials on the effects of low-fat diets on long-term weight loss. Low-fat diets do not cause more weight loss than diets higher in fat. Fat has been demonized for nearly half a century, based more on political considerations than scientific fact. (The Lancet Diabetes & Endocrinology, 3: 968-979, 2015)



Intermittent Fasting for Weight Loss

■ Success in many sports requires minimal body fat and maximal muscle mass. Intermittent fasting might help athletes achieve this goal—according to an article by Grant Tinsley, Joshua Gann and Paul La Bounty. Athletes must make weight in sports like weightlifting, powerlifting and martial arts. Constant dieting can sap energy and trigger glycogen depletion in the muscles and liver, which makes it difficult to train hard. Intermittent fasting, involving periods of fasting and non-fasting, might help athletes lose weight and maintain energy for intense training. Fasting every other day or even once a week results in a calorie deficit over time that promotes fat loss. Modified fasting allows athletes to consume some calories, which might be more realistic and palatable. Short fasts are best for athletes because they don't cause significant muscle loss. Athletes can fast on non-exercise days so they have plenty of energy for physical activity. We don't completely understand how intermittent fasting affects performance. (Strength and Conditioning Journal, 37: 60-71, 2015)

DEXA PROVIDES ACCURATE Assessment of Body Composition

Dual-energy x-ray absorptiometry (DEXA) is the "gold standard" for measuring body composition— the proportion of fat, bone and lean tissue. It is more precise than bathroom scale weight or body mass index (BMI, the proportion of weight to height). A recent study found that nearly 20 percent of people with normal BMIs were overfat, while some people with high BMIs had normal fat levels. DEXA has been a standard tool for body composition research for more than two decades. It is finally available to the average person at a growing number of spas, hospitals and doctors' offices. The procedure typically costs \$350 but is not usually covered by insurance. (The Wall Street Journal, September 16, 2015)

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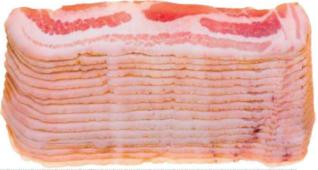
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• BY STEVE BLECHMAN AND THOMAS FAHEY, Edd

SHOULD YOU **STOP EATING** BACON AND HOT DOGS?

■ The World Health Organization found a link between processed red meat consumption and colorectal cancer. Eating processed meats increased the risk by 17 percent. The cancer-causing chemical in processed meat appears to be heme iron, which has been discovered in cancerous tissue. The link might also be the way bacteria in the gut reacts to the meat products. That doesn't mean

you should give up hot dogs, bologna and bacon, because the link was small. The risk of colon cancer from bacon pales in comparison with the risk of not getting a colonoscopy at age 50 to 75, or smoking. Processed meat causes about three percent of all cancer. In contrast, tobacco causes 86 percent of lung cancers. America would have 8,800 fewer cancer cases if the entire population gave up processed meats. In contrast, we would have 64,500 fewer cases of cancer if everyone gave up smoking. Cut down on hot dogs and bacon if you consume a lot of them. Otherwise, don't worry about it. (The New York Times, November 1, 2015)



Red Meat and Processed Meat Consumption Linked to Disturbed Blood Sugar Regulation

■ Increased levels of blood sugar (qlucose) and insulin are symptoms of pre-diabetes and type 2 diabetes, which are disturbances in blood sugar regulation. Diabetes increases the risk of heart attack, stroke, heart failure, kidney disease, blindness, impotence, amputation and premature death. A large meta-analysis, involving more than 60 research centers worldwide and 50,000 non-diabetic Caucasian patients, found a link between red and processed meat consumption and disturbances in blood glucose regulation. Consumption of processed meat was linked to increased blood glucose, while red meat consumption is linked to high blood levels of glucose and insulin. Genetic variations did not change the results. Consumption of red and processed meat is linked to higher body mass index (BMI; proportion of weight to height). Red and processed meat eaters tend to be fatter, which makes them more prone to type 2 diabetes. (American Journal Clinical Nutrition, 102: 1266-1278, 2015)

High-Protein Diet **Plus** Weight Training **IMPROVES BODY** COMPOSITION

The United States Department of Agriculture recommends that people consume 0.8 grams of protein per kilogram of bodyweight. Active people might benefit from as much as 1.5 grams per kilogram. Jose Antonio from Nova Southeastern University in Florida, and colleagues, found that high protein intake (3.4 grams per kilogram of bodyweight per day) plus a periodized weight-training program showed greater decreases in bodyweight, percent fat and fat mass than a group consuming 2.3 grams of protein per kilogram of bodyweight. There were no differences in fat-free mass (largely composed of muscle). Previous studies showed overfeeding protein without weight training did not alter body composition. They concluded that intensely training athletes would benefit from protein intakes greater than 2 grams of protein per kilogram of bodyweight per day. (Journal International Society Sports Nutrition, 12: 39, 2015) Nutrition, 102:309-315, 2015)



PALEO DIET IMPROVES METABOLIC SYNDROME SYMPTOMS

■ The Paleolithic or caveman diet is based on consuming berries, nuts, lean grass-fed meats and fish. Proponents of the diet claim that human genes evolved over thousands of years to optimize metabolism from eating these natural foods. Industrialization changed the human diet suddenly to include the consumption of grains and calorie-dense, high fat, processed foods. Food choices also increased dramatically, which promoted overeating and overconsumption of unhealthy foods. Researchers from Bahrain and the Netherlands showed that the Paleolithic (caveman) diet improved symptoms of

the metabolic syndrome, a cluster of risk factors that include abdominal fat deposition, abnormal blood fats, high blood pressure, insulin resistance and type 2 diabetes. Their study was a meta-analysis that combined the results of four well-controlled studies involving 159 people. People consuming the Paleolithic diet showed decreases in waist circumference, blood fats and blood sugar compared to people consuming a normal diet. Critics of the Paleolithic diet point out that the diets of ancient humans varied greatly from one place to another, so that it is unlikely that metabolically linked genes adapted uniformly. (American Journal Clinical Nutrition, 102: 922-932, 2015)





















CALCIUM SUPPLEMENTS INCREASE BLOOD PRESSURE

■ Many people, particularly women, take calcium supplements to maintain or increase bone density. This could be a mistake The United States Preventive Services Task Force, an independent think tank that reviews studies and develops clinical recommendations, advised women to avoid calcium supplements because they don't increase bone density and might increase the risk of heart attack. A study from the University of Auckland in New Zealand found that calcium supplements increased blood pressure and blood coagulation for up to eight hours. Calcium supplements might have severe and potentially deadly side effects. (British Journal Nutrition, 114: 1868-1874, 2015)

HIGH-SUGAR DRINKS LINKED TO OBESITY, DIABETES AND HEART **DISEASE**

■ Large population studies from the United States and Europe show a consistent link between consumption of high-sugar beverages and weight gain. These studies found that consuming only one eight-once high-sugar beverage a day causes weight gain in 12 months, compared to drinking diet beverages. The research reported that consistent consumption of high-sugar drinks increases the risk of dying from heart attack, stroke and congestive heart failure, regardless of weight. The drinks also raise blood sugar, which can eventually increase the risk of type 2 diabetes and increased blood fat. Increased blood sugar is converted to triglycerides (fat) in the liver, which wreaks havoc with metabolic health. Some experts think that the popularity of high-sugar drinks is responsible for the American obesity epidemic. (Nutrition Action Healthletter, November 2015)

BEEF AND DAIRY PROTEIN

Increase Post-Exercise Muscle Protein Synthesis Equally

■ The legendary ancient Olympian Milo of Croton was a six-time wrestling champion at the Ancient Olympic Games in Greece. According to legend, one secret to his success and great strength was that he ate 20 pounds of beef every day. Nicholas Burd and colleagues from Maastricht University in the Netherlands found no difference between consuming 30 grams of beef or dairy protein on muscle protein synthesis or protein signaling following weight training. Protein synthesis was slightly faster in the dairy group during the first two hours of recovery, but was equal after five hours. (American Journal

PROCESSED FOODS MAY BE ADDICTIVE

■ Many people have problems with binge eating-they gorge on food long after they stop feeling hungry. Erica Schulte from the University of Michigan, and co-workers, found that some processed foods might be addictive like heroine because they contain concentrated calories that are absorbed rapidly. Addictive foods were high in fat and had a high glycemic load (caused greatest increases in total blood sugar). Foods presenting the greatest risk of addiction included chocolate, ice cream, french fries, pizza, cookies, chips, buttered popcorn, cheeseburgers and muffins. Foods with the lowest potential for addiction included beans (no sauce), broccoli, cucumber, water (not a food), brown rice, carrots and bananas, Food addiction was most significant in people experiencing the greatest spikes in blood sugar. (PLOS ONE, 10(2): e0117959, 2015) ■





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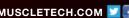
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BY STEVE BLECHMAN AND THOMAS FAHEY, Edd



NAC MIGHT IMPAIR MITOCHONDRIA PRODUCTION FROM ENDURANCE TRAINING

■ NAC (N-acetylcysteine) might interfere with the production of cell mitochondria normally triggered by endurance training according to Chinese researchers. Mitochondria are the powerhouses of the cell that are important for cell health and aerobic capacity. NAC is an amino acid byproduct found in dietary supplements that fight free radicals. Free radicals are highly reactive chemicals produced naturally during metabolism that can break down cell membranes, destroy DNA, trigger muscle soreness and protein breakdown, impair the capacity of the immune system and lead to cardiovascular disease. The Chinese study on mice found that NAC plus aerobic exercise reduced production of a chemical marker of mitochondrial production (cytochrome C oxidase). NAC helps buffer the effect of excessive free radical accumulation, but it could interfere with the production of cell mitochondria. (Free Radical Biology and Medicine, 87: 326-335, 2015)

Creatine Might Prevent Post-Exercise Muscle Soreness

Intense weight training, particularly involving eccentric muscle contractions (lengthening contractions), can trigger delayed-onset muscle soreness (DOMS). Intense training causes small injuries to the muscle fibers. This causes an inflammatory response that helps heal the tissue. Creatine monohydrate supplements might speed recovery from intense weight training and reduce the severity of

DOMS- according to a literature review led by Jooyoung Kim from Kookmin University in Korea. Creatine might reduce oxidative stress, modify inflammation, enhance muscle cell calcium metabolism and promote satellite cell activation- all of which might promote healing and speed recovery. We need more research before we know for sure. (Journal of Exercise Rehabilitation, 11: 244-250, 2015) >>







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VITAMIN D INCREASES Upper and Lower Body Muscle Strength

Low vitamin D levels are linked to poor bone health, muscle weakness, deficiencies in reproductive hormones, low aerobic capacity and increased body mass index (the proportion of weight to height). A meta-analysis by British researchers that combined the results of seven studies concluded that vitamin D supplements (4,000 international units per day) increased muscle strength in active, healthy, young adults. Vitamin D is synthesized in the body in a reaction involving sunlight. It can also be consumed in the diet by eating fatty fish, mushrooms and supplements. The supplement works best in people who were vitamin D-deficient (less than 30 nmol per liter) and in people over 65. Vitamin D is important for muscle growth, but it won't make much difference in most young, well-nourished bodybuilders. (Journal of Science and Medicine, 18: 575-580, 2015)

BANNED SUBSTANCES FOUND IN SOME SUPPLEMENTS

■ More than 10 years ago, a study by Ron Maughan and colleagues from the United Kingdom found that more than 25 percent of supplements sold on the Internet contained banned drugs. Contaminated supplements are still a problem. Boston internist Pieter Cohen charged that samples of weight-loss supplements contained a synthetic stimulant DMBA and that other supplements contain prescription or designer drugs. As a result of his research, the U.S. Food and Drug Administration (FDA) issued warning letters to 14 companies selling products containing the drug. It appears that Dr. Cohen is on a mission to eliminate the Dietary Supplement and Health Education Act of 1992 that allows supplement companies to market products containing substances deemed "generally recognized as safe." Most supplement companies in the United States produce high-quality, affordable products. FDA policies have made prescription drugs unaffordable for large segments of the population. We cannot let them do the same thing to sports supplements because of a few bad apples in the industry. (Drug Testing and Analysis, 6: 805-807. 2014)

Supplement Trade Organizations POSE UPGRADING FDA OVERSIGH

■ Four trade associations for dietary supplements proposed elevation of the Division of Dietary Supplement Programs (DDSP) to an office within the Center for Food Safety and Applied Nutrition within the U.S. Food and Drug Administration (FDA). The reorganization would increase the effectiveness of supplement regulation within the FDA. The DDSP was founded following the passage of the Dietary Supplement Health and Education Act in 1992 when annual supplement sales were \$6 billion. Today, sales exceed \$35 billion. (Nutraingredients-usa.com, September 4, 2015)

BITTER ORANGE EXTRACT US CAFFEINE IMPROVES **UAT ENDURANCE**

■ Bitter orange (citrus aurantium) is a nervous system stimulator included in many weight-loss supplements. A chemical called p-synephrine is responsible for its effects. A study led by Nicholas Ratamess from the College of New Jersey found that supplementing p-synephrine or caffeine plus p-synephrine improved squat endurance in college-age males. Subjects performed squats for six sets of 10 repetitions at 80 percent of maximum. Adding caffeine to p-synephrine had a small effect on endurance during the later sets. The energy-boosting effects of these supplements reduce the perception of fatigue during exercise and make workouts seem easier. They might improve performance by increasing training adherence (i.e., showing up at the gym). Other studies have concluded that bitter orange extract is safe when taken as directed. (Journal International Society Sports Nutrition, 12: 35,



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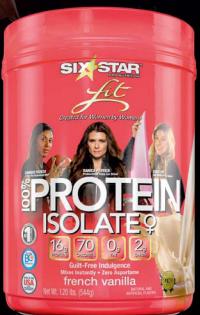
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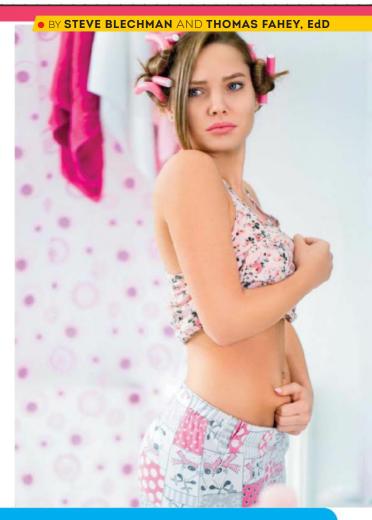


WOMEN CONCERNED ABOUT BODY IMAGE

■ Seventy-five percent of women don't like the way they look in the nude. That's true even among women with terrific bodies. Consequently, sixty-five percent have behavioral issues regarding food intake and 10 percent have eating disorders such as anorexia, bulimia nervosa and binge-eating disorder. Men of the "selfie generation" are also concerned about body image. The popularity of superheroes has given modern men inferiority complexes because Superman and Batman don't have potbellies. The modern male's obsession with body image has led to previously rare psychological problems such as depression and muscle dimorphism (obsessed with muscle mass). While eating disorders are rare in men, millennials are resorting to anabolic steroids, plastic surgery and makeup to make them feel better about themselves. The modern emphasis on gender equity has caused many modern young men to question their masculinity. Most women have no trouble talking about their insecurities, but men tend to hide them. Feelings of physical inadequacy are new psychological challenges for modern men. (Nature, 526: S12-S13, 2015)

Stronger Quads Linked to REDUCED DEATH RISK

■ Strong quadriceps are linked to a lower risk of premature death from cardiovascular disease and from all causes- according to a study led by Kentaro Kamiya from Kitasato University Hospital in Japan. Researchers measured quad strength in 1,314 aging men and performed follow-up measurements five years later. Stronger men showed an 88 percent lower risk of death from cardiovascular disease and a 75 percent reduced risk from all causes, compared to men with the least quad strength. Regular exercise is critical for a long life. Poor leg strength promotes exercise intolerance, which deprives people of an easy and effective way of maintaining metabolic health. (The American Journal of Medicine, 128:1212-1219, 2015)



WEIGHT TRAINING PREVENTS BRAIN DETERIORATION IN OLDER WOME

■ Weight training reduced the incidence of brain injuries (white matter lesions) in older women—according to a one-year study by Canadian researchers. Exercise is the new "brain food." Even moderate physical activity can improve brain health and function, and may delay the decline in cognitive function that occurs in many people as they age. Exercise improves the brain's ability to learn, remember, think and reason. It promotes the creation of new nerve cells throughout the nervous system and enhances the nervous system's plasticity—its ability to change and adapt. Exercise protects the brain as people age, helping to delay or prevent brain disorders such as Alzheimer's disease. Exercise is the true Fountain of Youth. (Journal American Geriatrics Society, 63: 2052-2060, 2015)

WEIGHT TRAINING REDUCES THE RISK OF TYPE 2 DIABETES

■ Weight training was linked to a 42 percent lower risk of type 2 diabetes—according to a study from the National Center for Global Health and Medicine in Tokyo, Japan. Researchers measured blood sugar and hemoglobin Alc (a measure of blood sugar control) in 26,630 middle-aged and older men and women with no evidence of type 2 diabetes, and followed-up five years later. Non-weight trainers showed a marked decrease in blood sugar control compared to people who weight trained. The effects were greatest in people over 50. Muscle tissue is an important site for blood sugar regulation. Avoiding muscle loss through weight training is an important way of preventing insulin resistance and type 2 diabetes. (Journal Diabetes Investigation, 6: 655-661, 2015) >>

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HOW TO LIVE LONGER

Maximum life span is determined by the number of times cells can divide. Molecular biologists usually use worms and fruit flies to study cell aging and death because these organisms don't live very long. The key to longer cell life is to reduce signaling from insulin and insulin-like growth factors, which are anabolic hormones. If these results apply to humans, the key to a longer life is to avoid high-sugar diets, prevent obesity and exercise regularly. In short-living animals, decreasing caloric intake increases the life span by about 25 percent. This is not practical in humans. However, positive metabolic changes occur in response to occasional fasting. The longest verified living human was Jeanne Calment (1875-1997), who lived 122 years. Life expectancy has increased consistently during the past century, largely because of a decrease in infant mortality. But, the maximum life span hasn't changed much. People like Ben Franklin, Thomas Jefferson and Michelangelo lived long lives, even though the average life span was only 30 to 40 years. Scientists are actively studying techniques that will expand the human cell life span. We should live so long. (Nature, 524: 170-171, 2015)

HIIT IMPROVES

BLOOD SUGAR REGULATION

■ High-intensity interval training (HIIT) improves blood sugar regulation and prevents type 2 diabetes—according to a large meta-analysis by researchers from Great Britain. HIIT involves repetitions of high-intensity exercise lasting 10 seconds to several minutes, followed by rest. The analysis combined the results of 50 studies. HIIT reduced insulin resistance, hemoglobin Alc and bodyweight more than continuous exercise or inactivity in people with and without type 2 diabetes. HIIT produces rapid increases in fitness and improves blood sugar regulation. (Obesity Reviews, 16: 942–961, 2015)



EXCESSIVE EXERCISE LINKED TO CORONARY ATHEROSCI FROSIS

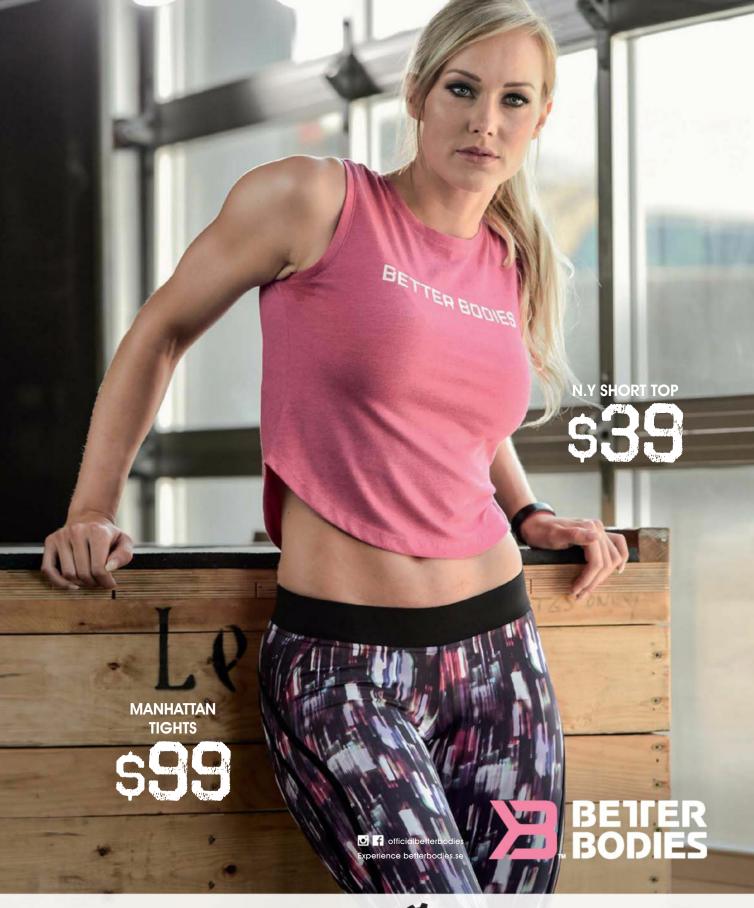
■ This month, we summarized several studies showing the health benefits of exercise. Excessive exercise, however, can cause hardening of the arteries in the heart and increase the risk of heart attack—according to a study presented by British scientists. They studied 169 veteran competitive endurance athletes and compared them with aged-matched non-athletes. Athletes who ran more than 35 miles a week or cycled more than 150 kilometers per week had greater coronary artery calcium accumulation. Fahey and Swanson (Med Sport, 12 (4): 124-128, 2008), in an analysis of 20,000 subjects from the Physicians' Health Study, predicted that 30 minutes of exercise was best for avoiding sudden cardiac death. People who exercised more or less than that were at increased risk. As Goldilocks could tell you, just as there's an optimal temperature for porridge, there is an optimal volume of endurance exercise that promotes health. (European Society of Cardiology meeting, August 2015)

EXERCISE SLOWS

the Aging Process

■ Physically fit people have healthier, more resilient genes. Exercise preserves gene structures called telomeres, which form the ends of the DNA strands and hold them together. Over time, the telomeres shorten, reducing their effectiveness, which triggers illness and death. Exercise prevents telomere shortening. A study led by Nobel Prize-winner Elizabeth Blackburn from the University of California, San Francisco and Paul Loprinzi from the University of Mississippi showed that people who exercised more had longer telomeres (leukocyte telomeres). The relationship was strongest during middle-aged people (40-64), which suggests that this is a critical time for remaining active. Other studies have found that overtraining shortens telomere length, so balance is the key. (Medicine Science Sports Exercise, 47: 2347-2352, 2015)

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BEAUTY QUESTIONS OF THE MONTH

with Dr. Jennifer Haley

Are there any known harmful effects from Botox?

When Botox Cosmetic is used by an experienced professional, risks are low. Botox is a protein that selectively weakens muscles that cause unwanted lines in the face, such as frown lines between the brows or crows feet. The procedure takes only a few minutes and has no downtime. You can go right back to work and it will slowly take effect over 10-14 days. As the muscles weaken, the lines in those areas will slowly smooth out. Bruising, although infrequent, is the most common side effect. Rarely can the protein move into the wrong muscle and cause a droopy eyelid. Going to an experienced injector and following your doctor's instructions afterwards will minimize this risk. Occasionally, there may be asymmetry and returning to your doctor for a two-week touch up can rebalance the effect and perfect the right "recipe" for you.

Each treatment lasts an average of three months and needs to be repeated for best results. I equate Botox treatment to putting your arm in a sling—the longer it stays in the sling, the weaker the muscles will get over time and the crease will appear shallower without protruding muscles on either side. If you do not have any lines, Botox is the absolute best way to prevent them from forming.

Can I mix products without compromising their effectivenessfor example, mixing my lotion with my sunscreen?

I do not recommend mixing products, as many ingredients are proven to work only in their specific formulation. Sunscreen will be diluted if mixed with lotion. Instead, I recommend purchasing a high-quality sunscreen with SPF 30-plus with zinc oxide that also contains a moisturizer. If you want to use multiple products, speak with an expert on how to properly layer the products for best results. For example, use a body or face moisturizer, apply it first to hydrate the skin, let it dry, and then apply your sunscreen.

Think of your sunscreen as a protective coating—all active ingredients should be applied first (vitamin C, growth factors, peptides, moisturizers, etc.) to enhance penetration with sunscreen as the last layer. Makeup can be applied over sunscreen.

Since I have been exercising more, I notice that I seem to have red dots and bumps around my inner thighs. Sometimes they itch or burn. What can I do for this?

For more detailed information, check out the questions I answered about maintaining healthy skin and preventing breakouts during a high-intensity workout in the August issue of FitnessRx for Women. Usually, red dots and bumps around inner thighs are from friction and heat irritating the hair follicles in that area. I recommend PCA Skin 5% BPO Cleanser—leave in place three minutes before rinsing to minimize bacteria and inflammation in that area. Make sure you are wearing tight and breathable clothing to avoid moisture build—up and friction. The worst thing you can do is sit around after working out with wet clothing, so shower and allow pores to flush after exercise. If shaving seems to make things worse for you, I recommend laser hair removal to thin the hairs in the area and make them less likely to form ingrown hairs.

Thank you for sharing your questions. You all deserve healthy skin!

Have a skin-related question for Dr. Haley? Email your question to editor@ fitnessrxwomen.com and you could see it answered in the next issue!

Dr. Jennifer Haley is a board-certified dermatologist with a degree in Nutrition Science from Cornell University. She has been an NPC bikini competitor, consultant to the US Capitol, and is the co-founder of the skin care line, Derivations—which offers complimentary skin consultations. She enjoys an active lifestyle in Scottsdale, AZ and Montrose, CO with her husband and three boys. "

7TIPS for BEAUTIFUL HEALTHY HAIR for Winter

- Christie Cash, Co-Founder and Chief Ambassador of BikiniBOD (BikiniBOD.com), shared her top tips for keeping your hair healthy this winter:
- **1. Let your hair down.** Having your hair in a ponytail or bun too often can cause extreme breakage. If you must, put your hair in a ponytail and make sure not to wrap it too tight.
- **2. Wash your hair immediately after a workout.** Sweat can damage hair follicles and cause actual hair loss. Sweating causes lactic acid build-up in the sweat secretions. I suggest packing a travel size shampoo and conditioner in your gym baq.
- **3. Feed your hair the proper nutrients it needs.** Hair is made primarily of proteins, thus to ensure adequate nutrients to your hair, you need to be consuming adequate amounts of quality proteins. I highly suggest foods like lean meats, legumes, almonds and Greek yogurt. Greek yogurt also has B5, which helps blood circulation, creating beautiful hair growth.
- **4. Avoid using hot tools regularly.** I love a great blowout, but allowing your hair to air dry can work wonders. Hot tools can over-dry your hair, especially in the cooler seasons. If you are concerned about your hair frizzing from air drying, add a serum for flyaways.
- **5. Consider a daily dose of biotin and other beauty-enhancing products.** The nutrient biotin is proven to strengthen your hair, skin and nails. Studies show that biotin may also contribute to faster hair growth. Give these products a try: NeoCell Biotin Bursts, Rainbow Light's Nail, Hair & Skin Connection $^{\text{M}}$ and BikiniBOD's Ultimate Beauty Body Formula.
- **6. Invest in a deep conditioner.** I suggest wrapping your hair in a towel with a deep conditioner before you go to bed. This will allow the conditioner to penetrate into the hair shaft. Rinse in the morning and your hair will thank you. Note: do not over-condition your hair during the winter—this can do more harm than good. Once a week should do the trick!
- **7. Maintain Trims.** The longer your hair gets, the more likely you are to get split ends. Maintaining a great trim will allow your hair to look healthier and more full. It will also allow your hair to grow faster.

WINTER BEAUTY

- In the winter, the brisk air leaves skin prone to dehydration, so we must protect it on the inside and out. Samitra Salon in San Francisco offered these tips and treatments to keep your skin nourished:
- NUTRIENT-RICH DIETS PROVIDE SKIN WITH THE NOURISHMENT ITS NEEDS. Dehydration is the skin's worst enemy, so drinking plenty of water is your best defense. Start each day with warm lemon water to help draw toxins and keep skin glowing. Foods rich in omega-3 vitamins like salmon and avocado contain healthy fats that add moisture to the skin.
- **SKIN CREAM IS ESSENTIAL TO LOCKING IN MOISTURE.** A good eye cream is crucial because the skin around your eyes is incredibly fragile and more prone to dryness. Apply this cream in the morning and at night.
- **GEL MANICURE REMOVAL IS EXTREMELY DRYING.** Apply a healthy amount of lotion to your nails pre- and post-manicure. It will help prevent dry, cracked skin.
- **DRINKING FROM A WATER BOTTLE MAY SEEM HARMLESS**, but it's a sure way to lose moisture on your lips. Cover your lips with a heavy balm before sipping or use a straw to decrease moisture loss.

For further inquiries about the salon, go to samitrasalon.com.





Be Fashion Forward and Safe





Empower, a fitness and programming product company for women, recently launched a NightBright collection that features prints with retroreflective ink technology, allowing women contemporary safety gear for being active outside in the evening and early morning hours this winter. When in daylight, the ink on NiteBright fabrics appears as a delicate, stylish silver printed pattern. When illuminated at night, it reflects light so she can be spotted by cars more than 450 feet away, according to Empower.

The complete selection of NiteBright is now available at EmpowerFitness.com and Amazon.com and select products will be in Target and Kohl's stores nationwide January 2016. The line consists of 15 day-to-night fashion pieces in unique prints and colors. This includes safety and weighted vests, safety bands, a wrist wallet and coldweather essentials such as a scarf, headband and fitness mittens

BY KRISTIN MASSEY



Start the New Year off right with this nutritious, eggless Caesar salad. For a completely vegan dish, use soy Parmesan cheese substitute and vegan Worcestershire sauce.

105.782 5.837 5.547 PRO 9: 5.537
CHO 9: 5.547
CHOLmg: 3.667
FAT Total 9: 7.458
SATURATED FAT 9: 1.579
MONOUNSATURATED FAT 0.784
TRANS FATTY ACID 9: 0.000
DIETARY FIBER, TOTAL 9: 1.287 SUGAR, TOTAL g:

NUTRITIONAL PROFILE (PER SERVING) VITAMINS A (RE): 348.748 C mg: THIAMIN mg: RIBOFLAVIN ma 0.076 NIACIN mg: PYRIDOXINE (B6) mg: 0.663 0.146 FOLATE mcg: COBALAMIN µq 1.139 SODIUM mg: POTASSIUM mg CALCIUM mg: 364.395

2.008

IRON mg:

Totals Per Serving Calories: 105 Protein: 5.8 grams Carbohydrate: 5.5 grams Fat: 7.4 grams Cholesterol: 3.6 mg Sodium: 364.3 mg

INGREDIENTS: 6 CUPS ROMAINE LETTLICE

- 4 CUPS GREEN KALE, STEMS REMOVED
- 6 OZ SILKEN TOFU, DRAINED
- 1/2 TSP MINCED GARLIC
- 1 TSP DIJON MUSTARD
- 3 ANCHOVY FILLETS OR 2 TEASPOONS WORCESTERSHIRE SAUCE
- 4 TABLESPOONS FRESHLY GRATED PARMI-GIANO-REGGIANO CHEESE
- 2 TABLESPOONS EXTRA VIRGIN OLIVE OIL
- 1-2 TABLESPOONS WATER (IF NEEDED)
- 1/4 TEASPOON SALT
- 1/4 TEASPOON PEPPER
- WHOLE WHEAT CROUTONS (OPTIONAL)

Wash and pat dry the romaine and kale. Tear into pieces, discarding large stems and toss together in a large salad bowl. In a food processor puree the tofu, garlic, mustard and anchovies or Worcestershire sauce. With the machine on, drizzle in the olive oil. Add 2 tablespoons of the cheese and puree. If dressing is too thick add 1-2 tablespoons water. Add half the salt and pepper and finish processing. Top the lettuce with the dressing and toss. Top with the remaining salt and pepper, the remaining Parmesan cheese and croutons, if using. Makes 6 servings.



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NUTRITIONAL PROFILE (PER SERVING) MACRONUTRIENTS A (RE): C mg: THIAMIN mg: RIBOFLAVIN mg: 263.029 34.746 KCAL: 25.059 64.201 142.889 PRO g 6.499 0.258 CHO g: CHOL mg: 142.889 FAT Total g: 3.794 SATURATED FAT g: 4.91 POLYUNSATURATED FAT g: 4.473 0.250 NIACIN mg: PYRIDOXINE (B6) mg: 9.957 FOLATE mcg: COBALAMIN µq: 3.834 TRANS FATTY ACID g: DIETARY FIBER, TOTAL g: SUGAR, TOTAL g: MINERALS SODIUM mg: POTASSIUM mg: CALCIUM mg: 163.751 520.883 76.003

IRON mg:

0.976

TANDOORI SALMON

The yogurt in this delicious tandoori sauce helps the marinade penetrate the salmon, allowing the heart healthy herbs and spices to be delivered to this healthy source of omega-3 fats.

INGREDIENTS:

4 SALMON FILLETS 4-6 OZ EACH

1/2 CUP PLAIN YOGURT (NOT GREEK)

1 TABLESPOON LEMON JUICE

2 GARLIC CLOVES, MINCED

2 TEASPOONS MINCED GINGER ROOT

1/2 TEASPOON PAPRIKA

1 TEASPOON GROUND CUMIN

1/2 TEASPOON TURMERIC

1/8 TEASPOON SALT

1/8 TEASPOON FRESHLY GROUND BLACK PEPPER

Combine the yogurt with the lemon juice and all the herbs and spices. Pour over salmon. Cover and refrigerate for at least four hours. Turning once. Shake off extra marinade and place salmon in a skillet or grill pan coated with olive oil cooking spray. Cook over medium high heat for 5 minutes. Turn and baste with additional marinade and cook for 3 to 5 more minutes until cooked through. Use just enough marinade to cover fish when cooking. There may be extra that you will discard. Makes 4 servings. "



Broccoli Marinara

I recently cooked up this recipe at a Whole Foods cooking seminar. Speaking to a group of female U.S. veterans returning from Iraq and Afghanistan, I explained that there are certain synergistic combinations of nutrients that create super foods. In this case, it's the broccoli and tomato sauce.

NUTRITIONAL PROFILE (PER SERVING) MACRONUTRIENTS KCAL: PRO g: C mg: THIAMIN mg: 0.052 3.232 PRO g: CHO g: CHO L mg: FAT Total g: SATURATED FAT g: MONOUNSATURATED FAT g: MONOUNSATURATED FAT g: O.309 COLYUNSATURATED FAT g: O.000 2.556 RIBOFLAVIN mg 0.094 NIACIN mg: PYRIDOXINE (B6) mg: 0.449 FOLATE mcg: COBALAMIN µg: MINERALS SODIUM mg: POTASSIUM mg: 0.057 208.503 DIETARY FIBER, TOTAL g: 224.810 CALCIUM mg: IRON mg: 62.518 0.816 SUGAR, TOTAL g: VITAMINS

INGREDIENTS:

- 3 CUPS BROCCOLI FLORETS
- 2 TEASPOONS EXTRA VIRGIN OLIVE OIL
- 2 GARLIC CLOVES, MINCED
- 1/2 CUP MARINARA SAUCE
- 2 TABLESPOONS PARMESAN CHEESE, OR SOY SUBSTITUTE FOR VEGAN

LEMON WEDGES



Totals Per Serving Calories: 76

Steam the broccoli until bright green and still firm. Heat the olive oil in a large sauté pan. Add the garlic and stir for about one minute. Add the broccoli and toss to combine with garlic. Pour the marinara sauce over the broccoli and stir to heat and combine. Remove from heat and sprinkle with Parmesan cheese and fresh lemon juice. Makes 4 servings.

Protein: 3.2 grams Carbohydrate: 7.6 grams Fat: 4.4 grams Cholesterol: 2.2 mg Sodium: 208.5 mg

RESOLUTION TEA

Coffee drinkers, it's time to turn over a new leaf. This dairy-free, no-sugar-added alternative to your morning java answers the call with almost 10 grams of protein, less than 5 grams of fat and just 6 grams of carbs- all for under 100 calories.

NUTRITIONAL PROFILE (PER SERVING) MACRONUTRIENTS VITAMINS A (RE): C mg: THIAMIN mg: RIBOFLAVIN mg: NIACIN mg: PYRIDOXINE (B6) mg: KCAL: PRO g: 90.000 9.101 CHO g: CHOL mg: FAT Total g: SATURATED FAT g: 6.000 0.015 0.000 4.500 0.500 0.013 0.020 0.001 0.000 MONOUNSATURATED FAT g: 1.000 FOLATE mcg: COBALAMIN µg: 3 000 POLYUNSATURATED FAT g: TRANS FATTY ACID g: 1.219 DIETARY FIBER, TOTAL g: MINERALS SODIUM mg: POTASSIUM mg: SUGAR, TOTAL g: 30.005 327.100 CALCIUM mg: IRON mg:

INGREDIENTS:

1 TEA BAG OF ENGLISH BREAKFAST
1 TEA BAG OF GREEN TEA
1/2 CUP HOT WATER
1 CUP UNSWEETENED ALMOND MILK
1 TO 3 PACKETS STEVIA

Steep the tea bags in the half cup of hot water for approximately two minutes. Discard the bags. Heat the almond milk until desired temperature. Add to the hot tea and sweeten with stevia. You can also spice this up with a hint of orange zest, cinnamon

Totals Per Serving

Calories: 90 Protein: 9.1 grams Carbohydrate: 6 grams Fat: 4.5 grams Cholesterol: 0 mg Sodium: 30 mg



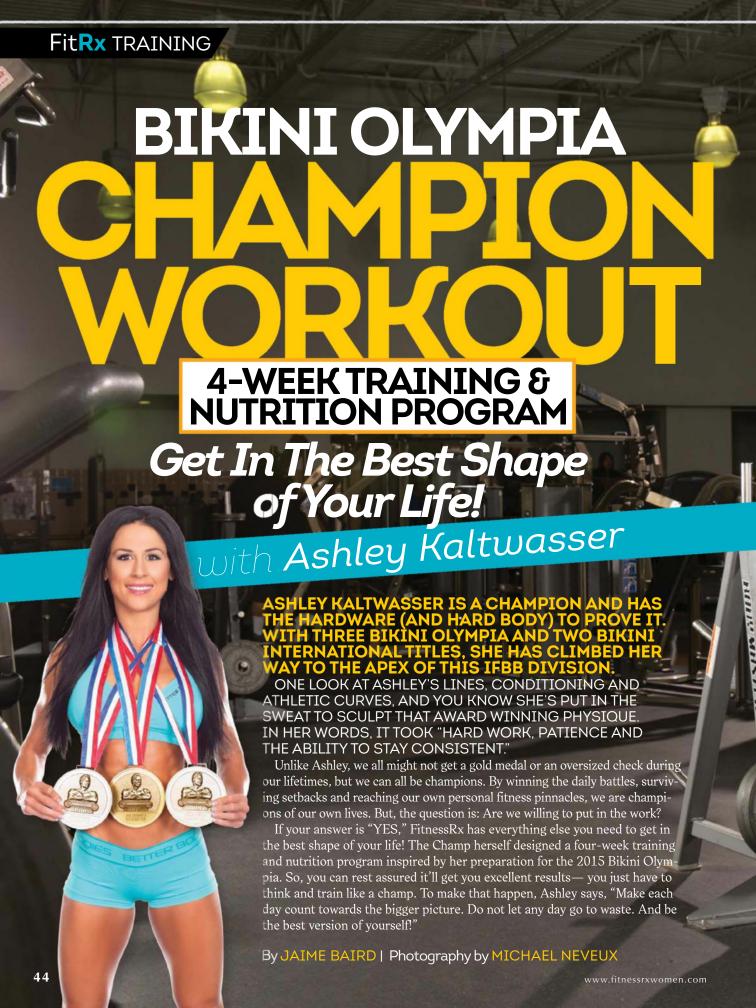




PLATE CURL TO PRESS





ASHLEY'S TIP

ASTILLET STIP
AFTER YOU PRESS THE
PLATE OVERHEAD, BE
DISCIPLINED WITH YOUR
RETURN TO THE STARTING
POSITION, FIRST, LOWER
DOWN FROM THE
SHOULDER PRESS, AND
THEN COMPLETE THE
ECCENTRIC PORTION
OF THE CURL.





THE WORKOUT

EXERCISE SETS REPS SHOULDERS, ABS & HIIT CARDIO PLATE CURL TO PRESS 4 10 15 SEATED LATERAL RAISE 4 5 DUMBBELL FRONT RAISE W/ SLOW NEGATIVE 10 CABLE UPRIGHT ROW 4 10, 10, 10 LAST SET TO FAILURE **ARNOLD PRESS** 5 10 SUPERSET WITH SEATED REAR DELT FLYE 5 10 STABILITY BALL ROLL-OUT 12 4 HANGING LEG RAISES - OBLIQUES 3 8 (EACH SIDE)

ASHLEY'S TIP

YOU WANT YOUR ARMS JUST SHORT OF STRAIGHT FOR MAXIMUM DELT ENGAGEMENT. KEEP THOSE TRAPS RELAXED.

SHLEY'S TIP ROLL OUT AS FAR AS YOU ARE COMFORTABLE, STRIVING TO MAKE A STRAIGHT LINE FROM YOUR HEAD TO KNEES. STABILITY BALL ROLL-OUT THEN, CONTRACT YOUR ABDOMINALS TO INITIATE ROLLING THE BALL BACK TOWARD YOUR LEGS.



EXERCISES NOT SHOWN

DUMBBELL FRONT RAISE WITH SLOW NEGATIVES

Holding a dumbbell in each hand parallel to the front of your thighs. raise your arms to shoulder height and then lower down slowly (a count of four). Make sure to keep your neck and traps relaxed during the exercise.

CABLE UPRIGHT ROW

Position cable pulley at the lowest setting and attach a straight bar. Holding the bar with both hands, raise your elbows up, keeping your traps pressed down. Slowly lower the weight.

ARNOLD PRESS

TOWARDS YOUR RIBCAGE.

With a dumbbell in each hand, lift weights in front of shoulder (about chin level) with palms facing toward you. Twist palms forward while pressing weight overhead until elbows are just short of straight. Lower back to the starting position.

SEATED REAR DELT FLYE

Sit at the edge of a bench with a dumbbell in each hand. Bend forward from the waist and let the dumbbells hang straight down from your shoulders with your palms facing in. Raise your arms out to your sides keeping your hands wide until they reach shoulder height. Slowly return to starting position.







THE WORKOUT **EXERCISE SETS REPS LEGS & GLUTES** WARM-UP WITH JUMP SQUATS 25 1 **BARBELL LUNGE** 4 10 (EACH LEG) SUPERSET WITH 15 STABILITY BALL LEG CURL 4 3 10 **GLUTE-HAM RAISE** 3 DUMBBELL HAMSTRING CURL 15 10 (EACH LEG) SINGLE-LEG BACK EXTENSION 3 DUMBBELL BULGARIAN SPLIT SQUAT 3 12 CALF RAISE MACHINE 1 SET OF THE FOLLOWING **TOES OUT** 20 **TOES FORWARD** 20 **TOES IN** 20 **BODYWEIGHT CALF RAISE** 1 TO FAILURE

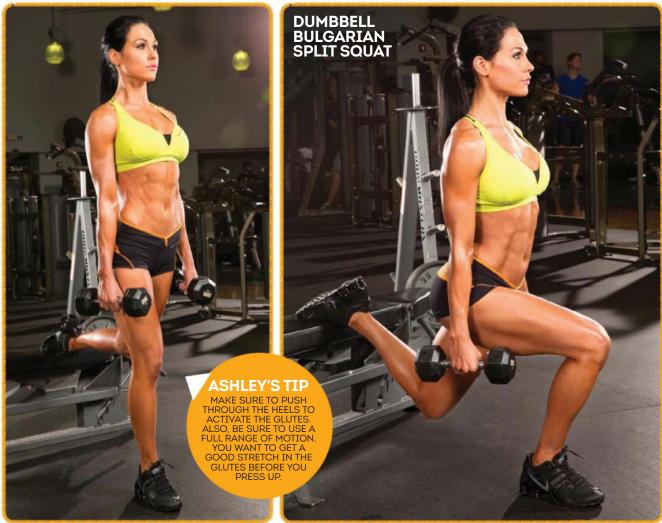
ASHLEY'S TIP

THE KEY TO THIS EXERCISE IS KEEPING YOUR HIPS LOCKED DOWN INTO THE BENCH AND HAVING A SLOW, CONTROLLED PACE. KEEP TENSION THROUGHOUT THE RANGE OF MOTION.





EGS ES



EXERCISES NOT SHOWN

BARBELL LUNGE

Beginning with your feet together and a barbell resting on your traps, take a big step forward with right leg. Descend to your lowest comfortable lunge position. Push through your front foot to return to the starting position. Complete all reps on the right leg then move on to the left leg. No rest between the left and right leg.

STABILITY BALL LEG CURL

Lying on the floor in a supine position, place your heels on top of a medium-sized exercise ball. Lift hips up as high as you can, keeping all weight on the upper back and shoulders. Keeping hips up, pull your heels to your butt and then extend your legs back to the starting position.

SINGLE-LEG BACK EXTENSION

Using a hyperextension bench, position one foot on the platform secured behind the ankle pads. The other leg should be outside of the platform. Bend forward at the waist to lower down. Then, slowly raise your torso back up using your glutes and hamstrings. Add weight for a more advanced movement.

CALF RAISE MACHINE

Place the balls of your feet onto the platform. Lower your heels as low as you can and press back up as high as you can on your toes. Concentrate on using a full range of motion.







THE WORKOUT

EXERCISE	SETS	REPS
BACK, BICEPS & HIIT CARDIO		
PULLOVERS	3	15
CHIN-UPS	4	10
STABILITY BALL REVERSE HYPEREXTENSIONS SUPERSET WITH	4	20
NARROW GRIP SEATED CABLE ROW	4	15, 12, 10, 8 (INCREASING WEIGHT EACH SET)
PREACHER CURLS WITH SLOW NEGATIVE	4	12
CABLE ROPE PRESSDOWN	4	12
ALTERNATING DUMBBELL CURL	4	10 (EACH ARM)
RESISTANCE BAND BICEPS CURL	1	TO FAILURE

GET A FULL STRETCH ON THE ECCENTRIC, POWER DOWN AND SLOWLY RETURN TO THE STARTING POSITION.



EXERCISES NOT SHOWN

Grab the bar with a reverse grip. Pull your body up so that your chin is above the bar. Slowly come down to starting position. Use chin/dip assist machine, bands or a spot, if needed.

STABILITY BALL REVERSE HYPEREXTENSIONS

Lie face down on a stability ball positioned under your belly and hips. With your feet apart on the floor behind you, place hands behind your head and raise torso off the ball by contracting the lower back. Return to starting position. Ashley's Tip: "Pause at the top of the movement for an extra burn!"

NARROW GRIP SEATED CABLE ROW

Keeping your back straight, pull the handle just below your chest while drawing your shoulders back. Slowly straighten arms and lean slightly forward to stretch the muscle before pulling back again. Ashley's Tip: "Focus on squeezing shoulder blades together at the peak of movement."

PREACHER CURL WITH SLOW NEGATIVE

Using a preacher machine or preacher bench, place the upper arms on the pad and grasp a barbell or dumbbells with your palms facing up. Curl the weight up, and then lower the weight slowly (use a count of eight).

ASHLEY'S TIP

DON'T SWING THE
WEIGHTS. KEEP THOSE
ELBOWS STATIONARY
AND CONCENTRATE ON
FEELING THE BICEPS
CONTRACT.





ASHLEY'S TIP

THIS IS A GREAT FINISHING EXERCISE! DON'T LET THE FORM SUFFER WHEN YOU GET FATIGUED.

THE WORKOUT		
EXERCISE	SETS	REPS
CHEST, TRICEPS & ABS		
INCLINE DUMBBELL PRESS	4	12
EXPLOSIVE PUSH-UP WITH CLAP	3	10
SKULL-CRUSHERS	4	15, 12, 10, 8 (INCREASING WEIGHT EACH SET)
BENCH TRICEPS DIPS	4	20
ONE-ARM REVERSE GRIP CABLE TRICEPS PUSHDOWN	3	10 (EACH ARM)
HANGING LEG RAISES	5	15

ASHLEY'S TIP

IF YOU CANNOT
PERFORM A PUSH-UP
WITH THE CLAP JUST
YET, A LITTLE 'HOP' OFF
THE GROUND WILL BE
SUFFICIENT. MAKE SURE
TO KEEP YOUR CORE
BRACED.









KEEP PUSHING!

Ashley shares her top three tips to keep you motivated.

- 1. GET MORE SLEEP. Sleep seriously impacts your mood. More sleep means more energy, which leads to better workouts. No one likes to work out when they're drained and tired.
- 2. SHARE YOUR GOALS. Discuss your ideas and desires with a friend or partner- it will help you get clear on what you are seeking to achieve. Also, it's always nice to have someone else out there keeping you accountable and providing that extra little push.
- **3. REWARD YOURSELF.** Always have something to look forward to on the way to your goal. For example, treat yourself to a massage or pedicure after a week's worth of effective workouts. It'll help you celebrate your progress.

CHEST, TRICEPS TRICEPS

ASHLEY'S TIP

YOU CAN MAKE THIS MOVE MORE DIFFICULT WITH ELEVATING YOUR FEET AND PLACING A WEIGHT IN YOUR LAPHOLD THE CONTRACTION AT THE TOPOF THE MOVEMENT FOR TWO COUNTS TO INCREASE THE BURN.



EXERCISES NOT SHOWN

INCLINE DUMBBELL PRESS

With a dumbbell in each hand, lie back on a bench set to a 45-degree angle. Position the dumbbells at the outside of your chest with palms facing forward. Press the dumbbells toward the ceiling then lower back to starting position. A steeper bench transfers more of the work to the shoulder and away from the chest.

SKULL-CRUSHERS

Lying on a flat bench holding a barbell or EZ bar, press the weight straight up toward the ceiling. Keeping your elbows stationary, slowly lower the barbell to your forehead. Extend the weight back up to the starting position without locking out your elbows.

ONE-ARM REVERSE GRIP CABLE TRICEPS PUSHDOWN

Attach a handle to a pulley positioned at the highest level. Grab the handle with an underhand grip and then position the elbow at your side. Extend the arm straight down to your legs keeping the elbow pressed into your body. Contract the triceps and slowly return to the starting position.

HANGING LEG RAISE

Either hanging from a chin-up bar or using a Captain's chair, begin with your legs hanging straight down. Using your abdominals, bring your legs up to about hip level and slowly lower. Keep the motion under control--don't use momentum by swinging your legs. If leg raises are too challenging, bring your knees up instead.









HIIT CARDIO PROGRAMS

ROTATE BETWEEN THE FOLLOWING PROGRAMS:

PROGRAM 1: TREADMILL HIIT

WARM-UP: 5-minutes walk

Then, perform the following intervals 5 times:

2-MINUTE MODERATE PACE 1-MINUTE INTENSE SPEED 1-MINUTE WALK

COOL-DOWN: 5-minute walk

PROGRAM 2: OUTDOOR SPEED

NOTE: THE DISTANCES ARE LONGER THAN A TYPICAL SPRINT PROGRAM- YOUR SPEED SHOULD BETWEEN A COMFORTABLE RUN AND AN ALL-OUT SPRINT.

WARM-UP: 15 minutes of jogging/ dynamic stretching

Then, RUN THE FOLLOWING DISTANCES: 400M*, 800M, 1,200M, 800M, 400M

Rest two to three minutes between each interval.

COOL-DOWN: 10-minute walk *400m = one lap around the track.

PROGRAM 3: PLYOMETRIC CIRCUIT

WARM-UP:

2 x 20 stationary squats

Then, perform the following circuit four times:

10 BOX JUMPS

10 STEP-UPS JUMPS

(EACH LEG)

10 PLANK JACKS

10 PLANK LATERAL JUMPS (EACH SIDE)

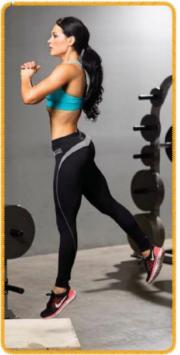
Rest 2 minutes between each round.

COOL-DOWN: 5-minute walk



















SIMPLE **FAT-LOSS MEAL PLAN**

This meal plan is inspired by Ashley's approach to nutrition when prepping for stage. The principles of her meal plan:

>> CYCLE CARBS. Ashley cycles her starchy carbohydrates: six days low, one day high.

>>TREAT YOURSELF: She incorporates one treat meal each week.

>> VARIETY: Ashley doesn't eat the same thing daily. Rather, she consumes whichever clean food items she desires or has available, but follows a framework similar to what's detailed in this meal plan.

>>SIMPLICITY: This nutrition approach fits Ashley's desire for a relaxed, simple way to eat.

>> HYDRATE: Drink at least one gallon of water daily.





1 PROTEIN 1 STARCHY CARB

MEAL 2

1 PROTEIN 1 VEGGIE 1 FAT

(Tuesday: Add 1 Starchy Carb)

1 PROTEIN 1 VEGGIE

(Tuesday: Add 1 Starchy Carb)

MEAL 4 - POST WORKOUT

1 PROTFIN 1 STARCHY CARB

MEAL 5

(Saturday: Sub Treat Meal)

1 PROTEIN 1 VEGGIE 1 FAT

MEAL 6

1 PROTFIN 1 FAT

MACRO BREAKDOWN



PROTEIN (25G PER SERVING)

Egg Whites, 8 oz plain Greek yogurt

Examples of approximately 25g servings: 3 oz chicken or turkey breast, 3 oz lean beef, 4 oz white fish, 4 oz tuna, 1 scoop Gaspari Nutrition IsoFusion and MyoFusion protein powder, 1 MuscleEgg

VEGETABLES (APPROX. 1 CUP)

Some of Ashley's favorites: Squash, Brussels sprouts, zucchini, broccoli, cauliflower, green beans, spinach



STARCHY COMPLEX CARBS OR (25G PER SERVING)

Example approx. 25g servings: 1/2 cup of rolled oats, ½ cup rice, 4 oz sweet potato, 4 oz red potatoes, ½ cup quinoa, ½ cup beans (lentils, black), 1 medium banana, 1 medium apple

SERVINGS HEALTHY FATS (15G PER SERVING)

Example approx. 15g seruings: 3 oz avocado, 1 tbsp oil (olive, macadamia, walnut, coconut, flax), 23 raw almonds, 2 tbsp all-natural almond butter or peanut butter



EAT LIKE ASHLEY

ASHLEY'S EXACT OLYMPIA DIET IS AVAILABLE AT WWW.ASHLEYKFIT.COM



CHATTING WITH THE CHAMP

FITRX: What's one thing you've done over the last year to help you stay on the top of your same?

help you stay on the top of your game? **ASHLEY:** I constantly changed the way I prepped and trained.

I switched up my environment as well. This prevented me from getting

bored with repetitive training. It was very mentally refreshing, and it allowed me to actually look forward to my training sessions!

FITRX: What's the most important attribute for success?

ASHLEY: For me, the most important attribute in my success has been being realistic. It's important to be realistic about your goals and journey. Take it step-by-step and day-by-day. And whatever you do, don't forget to enjoy the process. Don't take it too seriously— you may just end up missing out on the fun in between! Focus more on the journey than

the outcome itself. Meet as many people as you can and connect! You may just end up making a friend for life.

FITRX: To stay motivated, it's critical to remember why you started your fitness journey. Can you share why you started and continue to live fit?

ASHLEY: Sports and fitness was something that was instilled in me from a very young age. I always wanted to be the best at any sport that I participated in. I ran track throughout college on a scholarship. Once my track career was over, I needed another sport to dabble in. My competitive nature drove me to compete in Bikini competitions. I found success in Bikini competitions, and I had a lot of fun, too! I loved the people I met and the challenge of getting my body as fit as possible. But what really has kept me going is the fact that I have the ability to inspire women from all over the world. It is such a rewarding feeling.

FITRX: When it comes to nutrition, you don't prescribe to the counting calories or macros methods, you call yourself more of a "hippie dieter" relying a bit more on intuition. Can you tell us more about that? ASHLEY: I don't do an IIFYM diet, because I hate math! I am a very unorganized person, so this is not an ideal diet for me personally. There are many types of diets out there ... you've got to pick the one that works best for YOU and keeps you sane. That's the key here ... being able to go the distance. Don't choose a diet that you will fall off of in two weeks. This will depend on your own dietary needs and lifestyle. I like to take a more relaxed approach. This is what has kept me going the distance. Each meal usually contains a serving of protein with either a serving of carbs or fat. The sources of my food change daily depending on what I am in the mood for. The closer that I get to the show, however, the tighter and stricter my diet becomes. I monitor how my body is changing every day. I also believe in treating myself here and there. This is a mental refresher. I like to take one treat meal per week while I am on contest prep.

ASHLEY: I would like to focus more on the business side of the fitness industry. I have quite a few projects that I am working on at the moment, including working on my website www.AshleyKfit.com. I plan on traveling even more than last year with my sponsors. I also have several seminars, appearances and photo shoots already booked for 2016. Since I have so many projects going on, I have decided that I won't step onstage again until the 2016 Ms. Bikini Olympia competition in September. This will also be good, because I am giving my body a little rest from dieting and contest prepping.

KEEP UP WITH ASHLEY

Check out Ashley's "Keep it Fresh" column at FitnessRxWomen.com for her fun and flavorful fit living tips. You can also find her at www.AshleyKfit.com, on Facebook (www.facebook.com/BikiniProAshley), Twitter (@AshleyKFit) and Instagram (AshleyKfit). Ashley is represented by Fitness Management Group (FMG).





TRAIN WITH

2016 SWEEPSTAKES

Wonder what it takes to be an IFBB Ms. Bikini Olympia Champion? Here's your chance to find out! Enter online at GaspariNutrition.com to win a day with 3X Ms. Bikini Olympia Champion, and international fitness superstar, Ashley Kaltwasser. Get one-on-one training, meal prep and diet advice, and posing tips from the expert herself. You'll also receive a gift bag including Ashley's must-have items and over \$250 in Gaspari Products. Let Ashley Kaltwasser show you how to train like a champion!

2 GRAND PRIZE WINNERS

Win an all-expense paid day with the IFBB Bikini Champ - includes training, meal prep, posing and more - plus an exclusive goodie bag full of *all* of Ashleys go-to brands and Gaspari products - **OVER \$2500 VALUE!**

3 RUNNERS-UP

Win an exclusive goodie bag full of all of Ashleys go-to brands and Gaspari products - OVER \$500 VALUE!

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TICHT TONED

With IFBB BIKINI PRO ANYA ELLS

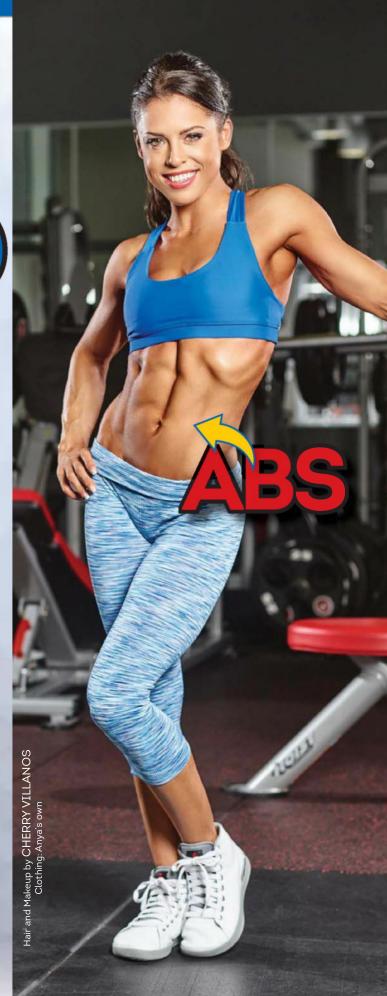
By LISA STEUER
Photography by ARSENIK STUDIOS

Do you want to really improve your physique this year or just need an additional challenge to stay on track? Then this program is for you! Toned glutes and abs go well together, so these workouts from IFBB Bikini Pro Anya Ells will help you take your physique to a whole new level.

These workouts include compound movements to help engage the entire body. "To increase my heart rate, I added in a superset of good mornings and kettlebell swings," said Anya. "Supersets are amazing for adding volume to your workout as well as burning fat, as they keep your heart rate up and your body is under tension for a longer period of time. Not only do supersets burn more calories, but they also improve your muscular endurance."

To help you really burn fat, this program also includes high-intensity interval training so that you can get lean without sparing muscle. Ready to work hard and achieve your goals?

Let's get started!







EXERCISE	SETS	REPS
CABLE KICKBACKS	4	20
SUMO DEADLIFTS	4	20, 15, 15, 12
HIP THRUSTS ON SMITH		
MACHINE	4	20, 15, 15, 12
GOOD MORNINGS		
supersetted with	4	15-20
KETTLEBELL SWINGS		
WALKING LUNGE WITH	4	30 (15 EACH
A KICKBACK		LEG)

CABLE KICKBACKS: Attach ankle strap from the low pulley cable. Stand facing the machine with knees bent, grabbing the machine frame for support. Kick your leg back as far as you can without arching your back, and concentrate on squeezing your butt muscles as you extend your hip.

ANYA'S TIP: "Make sure your core is engaged and you are squeezing your glutes as you kick back."

HIP THRUSTS ON SMITH MACHINE: Position yourself on the Smith machine as pictured. Brace your core and forcefully extend the hips until the torso is parallel with the ground and a hip-neutral position is reached. Hold the contracted position for a moment then return to the start position.

ANYA'S TIP: "This is just a hip hinge movement; there isn't much range of motion. As you drive your hips toward the ceiling, push through your heels and flex your glutes."

GOOD MORNINGS: Place bar on your shoulders; keeping your legs straight, bend forward. Return to starting position. You should feel a pull in your glutes and hamstrings.

ASHLEY'S TIP: "Keep your legs as straight as possible without locking your knees."

KETTLEBELL SWINGS: Grip a kettlebell with palms facing you. Soften the knees and shift your bodyweight into your heels, lowering your rear back and down. Driving through the heel, explode through your hips to send the weight upward, to chest height. Let weight lower back down and let swing between your legs as you shift back onto your heels before repeating movement.

ANYA'S TIP: "It's a power movement, so the momentum should come from the hips, not the arms."

WALKING LUNGE WITH A KICKBACK: Step forward with your left leg and try to touch the ground with your right knee. Make sure to keep your left knee behind the ankle. When you stand up, kick right leg back. Then, repeat with the other leq.







Good MORNINGS









ALL ABOUT ANYA

Learn more about the personal trainer, prep coach and IFBB Bikini pro who earned her pro card at the Arnold Amateur in 2015.

FRX: How did you get into fitness?

ANYA: I was very active growing up, competing on a swim team when I was in elementary school, as well as taking part in track and field when I was in high school. I was a long distance runner after high school, which is what got me into training in the gym. My goal was to one day do a marathon, but once I started training my goals changed to wanting to build muscle. I remember telling my first trainer, "I want to build a bum, maybe some abs as well." Once I started to see the transformation, there was no going back; it became my lifestyle and passion.

FRX: Why did you decide to start competing?

ANYA: My twin sister was the first to decide she wanted to compete. I went with her to her first show where she competed in Figure. I was so inspired by my sister and amazed at how she completely changed her body. I was so excited for her, which fuelled my drive to improve myself. It was then I wanted to compete. However, I liked the look of the Bikini category, and I wanted to be different from my sister, as we are twins and constantly being compared.

FRX: How do you and your sister motivate and support each other?

ANYA: My sister competed in two Figure competitions and decided it wasn't for her. She started powerlifting and recently Olympic lifting, so we have very different styles of training. Our differences actually make us better trainers and coaches because we learn from each other. I'm motivated by my sister's determination to always learn more, and being her twin sister, there is a little bit of a competitive push to be as knowledgeable as she is. We are sisters and best friends, so no matter what, we always support each other.

FRX: Why do you enjoy fitness so much?

ANYA: Fitness is a lifestyle. I enjoy being active and having physical strength— it keeps me balanced. There is always time for work and everyday stresses of life; I find my balance by getting in my workouts and eating nutritious food to fuel my body and mind. It's like a project and hobby all in one.>>

FRX: Do you have a life motto that you live by?
ANYA: Stay positive and be present. I hate dwelling on the



EXERCISE	SETS	REPS
STABILITY BALL KNEE TUCK	4	20
V-UPS	4	20
CABLE CRUNCHES	4	20
WEIGHTED REVERSE	4	20
CRUNCH ON A BENCH		

STABILITY BALL KNEE TUCK: Begin on all fours, with your shins on top of the stability ball in a push-up position. Exhale and bend your knees toward your chest, as the ball rolls forward and your hips lift toward the ceiling. Inhale and straighten your legs as you roll the ball

ANYA'S TIP: "Make sure to tuck your hips to engage your lower abdominals as you curl the ball under you."

back to the original position.

V-UPS: Lie flat on your back with your legs straight and arms straight out above your head, breathing out. Contract your abdominals as you bring your feet and your hands up before lowering back down.

ANYA'S TIP: : "To make it more challenging, you can hold a medicine ball."

CABLE CRUNCHES: Position the cable machine pulley high and attach the grip bar. Kneel below the pulley. Grasp the bar and lower it down such that the bar should be placed behind your head. Position your hips back slightly and allow the resistance from the cable to lift your torso upward a bit so that your spine is slightly hyperextended. Keeping the hips stationary, contract the abs and bend the waist. The elbows should move toward the thighs/knees, rather than straight toward the ground. Think of curling your torso toward your knees. Pause at the bottom of the movement and tense the abs hard. Inhale and slowly return to the starting position. Make sure to keep tension in the abs throughout the exercise.

WEIGHTED REVERSE CRUNCH ON A BENCH: Holding the weight between your feet and sitting on your tailbone on a bench, breathe out every time you contract your abs, making sure your abdominals are engaged until the last repetition.



Stability Ball KNEE TUCKS



Cable CRUNCHES



Weighted Reverse CRUNCH

www.fitnessrxwomen.com

HIIT Circuit

BOX JUMPS: 15

SCISSOR JUMPS: 20

BIKE SPRINTS: ONE MINUTE AT 40 PERCENT OF YOUR EFFORT, 45 SECONDS AT 90 PERCENT EFFORT

negative things that happen. There will always be hard times, and I think it's important to address them and move on. Solve the problem, learn from it and progress. It's easier said than done, but I remind myself it's wasted energy worrying about something that already happened or something that may never happen.

FRX: What's your advice for women who want to get in shape like you?

ANYA: Take it one step at a time. Be patient and kind to yourself. I've worked with a lot of women, and we tend to be very hard on ourselves. Your journey to a fit life can be more enjoyable when you're not picking yourself apart and putting yourself down. See the strength in yourself as your make goals and crush them along the way.

Perform this workout two to three times a week. Perform the circuit five times through, resting 40 seconds between each exercise.



SCISSOR JUMPS:



3)BIKE SPRINTS:



SUPPLEMENT STACK

PRE-WORKOUT: GREEN TEA EXTRACT, BURN-FX BY PERFECT SPORTS INTRA-WORKOUT: BIO-CELL AMINOS BY PERFECT SPORTS POST-WORKOUT: DIESEL NEW ZEALAND WHEY PROTEIN, GLUTAMINE BY PERFECT SPORTS FRX: How do you stay motivated? ANYA: I get motivated on a daily basis. It can be anything— a new goal I set for myself, or seeing a client reach their goals. I believe that motivation is contagious; surrounding myself with people who have the drive to accomplish a goal or simply have a love for fitness will rub off on me.

FRX: What's next for you? ANYA: Currently I am working on getting my website up so I can start expanding my personal training business to online coaching, and programming. I also want to expand my knowledge of nutrition by taking part-time classes and eventually being a certified nutritionist. I think it's important to keep yourself informed as a trainer—fitness and health are always evolving, and you don't want to be left behind. I think one of the reasons I'm good at what I do is simply because I care. I want to see my clients achieve their goals; everyone is different, so I feel like I learn from every client I work with. As far as competing, my next competition will be at the Arnold Classic 2016.

KEEP UP WITH ANYA

Website: Anyaells.com Twitter: @anyaells Instagram: @anyaells

Sponsors: Fuel Foods and Perfect Sports

SHOULD 2016

QUICK AND INTENSE VOLUME SHOULDER WORKOUT

WITH IFBB BIKINI PRO TAWNA EUBANKS

By LISA STEUER Photography by MICHAEL NEVEUX Styling by TRISH STELLA Training apparel from BETTER BODIES Makeup and hair by KRYSTLE RANDALL



If you want to build strong, sculpted shoulders, you've got to be willing to work. And even though it takes dedication to build a strong upper body, it doesn't mean you have to spend hours in the gym— you just need to know the right exercises to hit all parts of the shoulders to properly work them. So we've enlisted the help of IFBB Bikini Pro Tawna Eubanks to help us sculpt sexy shoulders for 2016. Come on—let's get started! >>



THE WORKOUT

This workout is effective because it's fast and intense while hitting all parts of the shoulder. For optimal results, perform this workout one to two times a week. Go through entire workout once and rest for one minute and 30 seconds. Repeat three times.

SCULPTING SHOULDERS IS NOT EASY, BUT WITH **DEDICATION AND THE PROPER METHODS, IT CAN BE DONE.** HERE ARE TAWNA'S TOP TIPS FOR WORKING THE SHOULDERS SO THAT YOU CAN GET THE MOST OUT OF THIS WORKOUT AND YOUR TRAINING:

- GO FOR HIGHER REPS, LESS WEIGHT.
- CONSTANT MOVEMENT/SHORT REST PERIODS.
- MIND TO MUSCLE CONNECTION. DON'T JUST GO THROUGH THE MOTIONS AND SWING THE WEIGHT AROUND.
- SIDE, REAR AND COMPOUND MOVEMENTS, THIS WAY THE

EXERCISE

SUPERSET 1

DUMBBELL SHOULDER PRESS: 3 X 15-20 REPS

CABLE MACHINE FRONT RAISES: 3 X 15-20 REPS

DUMBBELL SIDE LATERALS: 3 X 15-20 REPS

REVERSE PEC DEC: 3 X 15-20 REPS

Rest for two minutes

SUPERSET 2

MACHINE SHOULDER PRESS: 3 X 15-20 REPS

PLATE FRONT RAISES: 3 X 15-20 REPS

MACHINE SIDE LATERALS: 3 X 15-20 REPS

HIGH ROPE PULL ON CABLE: 3 X 15-20 REPS

- THINK ABOUT THE MUSCLE YOU ARE WORKING.
- HIT A MOVEMENT FOR EACH PART OF THE DELTS—FRONT, ENTIRE SHOULDER IS HIT.

EXERCISE DESCRIPTIONS

DUMBBELL SHOULDER PRESS: Standing with your feet about shoulder-width apart, hold a dumbbell in each hand, raising them to head height with elbows at about 90 degrees. Lift the dumbbells straight up until they almost touch and pause for moment at the top. Lower dumbbells and repeat.

Tawna's Tip: "Pick a manageable weight so you can get a full range of motion. If you can't lower the weight below your ears and fully extend at the top, it's probably too heavy."



CABLE MACHINE FRONT RAISES:

Set the cable pulley at the lowest setting with a bar attached. Straddle the cable and hold onto the bar with hands positioned narrower than shoulder width.

Keeping arms just short of straight with your shoulders and traps pressed down, lift the bar slightly above eye level. Lower weight slowly.

Tawna's Tip: "Try these overhand and underhand and see how the difference hits vour shoulders. Here I did underhand."





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DUMBBELL SIDE

LATERALS: Begin by grasping two dumbbells and allow them to hang by your hips. With a slight bend to your elbows, raise the dumbbells up and out to the sides until they reach shoulder level. Slowly return the weights back to the starting position.

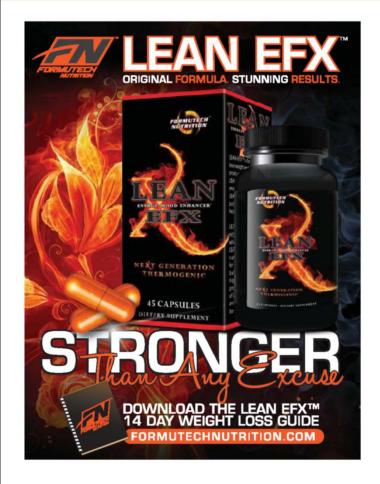
Tawna's Tip: "Lead with your elbows.
Your wrist should never be above your elbows."



REVERSE PEC DECK: Adjust the handles on the reverse pec deck machine so that they are fully to the rear. Choose a weight that's good for you and adjust the seat so that the handles are at shoulder level. Grasp the handles so that your hands are facing in. Pull your arms out to your sides and back, contracting your shoulders and rear delts. Return to starting position.

Tawna's Tip: "Don't go all the way back. Stop where your arms are perpendicular to vour body." ->>





MACHINE SHOULDER

PRESS: Sit down on the shoulder press machine and select the weight. Grab handles and keep elbows bent and in line with your torso. Lift the handles, fully extending the arms. Hold the top position for a second before lowering back to the starting position.

Tawna's Tip: "Make sure you have the seat adjusted at the right height. The resistance should start when your hands are just below the level of your ears."



TAWNA'S TOP TIPS FOR NUTRITION

1. ALWAYS prepare. "Cook your food at the beginning of the week and weigh them out as you go. Pack up the night before your day.

2. There are NO excuses. "You can pretty much get a grilled chicken breast, a grilled chicken sandwich or a grilled chicken salad anywhere...I mean, even McDonald's has that. There is always a healthier choice—you just have to look!

3. Have cheat meals. "You cannot deprive yourself— this is where people cave. You go strong for three weeks with no cheat meals and feel it's time, then you gain seven pounds from one cheat meal because you decided to eat the entire aisle four in Walmart. Give yourself small cheat meals more often and you'll feel less likely to indulge.

4. Do not be afraid to eat. "I have found over the years that the more carbs you give me, the more I drop in weight. Of course, I'm not talking about bread carbs, but rather healthier carbs like oatmeal, rice or potatoes.

5. Weigh out your food. "If you are unsure or have not mastered your portions by eyeballing, don't risk it! You could be eating too much or in some cases, not enough!'

6. Play with your food. "No, not literally— just figure out what food works for you. Do you do better with higher carbs and low fats, or higher fats and low carbs? Do you like cream of rice or oatmeal better? Sweet potatoes or red potatoes? The list goes on. You need to learn YOUR body and how it responds to different foods.

MAKING RESOLUTIONS

"CONSISTENCY IS KEY. HEARD IT ENOUGH YET?" SAID TAWNA, WHEN ASKED ABOUT ADVICE FOR MAKING A FITNESS RESOLUTION A REALITY IN 2016. "THIS IS WHERE MY 'MINI GOALS' TALK IS VERY HELPFUL. OF COURSE YOU MAKE A BIG GOAL TO LOSE X AMOUNT OF WEIGHT, OR LIFT X AMOUNT OF WEIGHT, OR LOSE SO MANY INCHES IN X AMOUNT OF TIME. HOWEVER, IF YOU JUST GO ALL OUT FOR THE GOLD, IT'S SO EASY TO LOSE FOCUS AND GET OFF TRACK. ANYTHING IN FITNESS TAKES TIME, ESPECIALLY IF YOU'RE MAKING A YEAR-LONG GOAL. MAKE MINI GOALS ALONG THE WAY ... IT WILL HELP KEEP YOU POSITIVE AND MOTIVATED! IT COULD BE ANY MINI **GOALS- JUST MAKE IT CUSTOMIZED FOR YOU!"**

PLATE FRONT RAISES: Hold a plate in both hands with palms facing each other. Slowly raise the plate until it is slightly above shoulder level. Hold for a second before slowly lowering to the starting position. Tawna's Tip: "I like to bring the plate a little above my forehead. It makes it a little harder than just straight out."

MACHINE SIDE

LATERALS: Choose a weight on the machine. Sit so that you are facing the machine, with the base of your upper arm against the pad. Maintain a neutral spine with your chest up. Move your upper arms laterally until they are parallel to the floor. Pause for a moment before returning to the start position.

Tawna's Tip: "Keep your shoulders down or else you will be using your traps too much."

HIGH ROPE PULL ON CABLE:

Attach a rope to the pulley and hold with an overhand grip. Extend your arms in front of you. Pull the cable attachment toward your upper chest, keeping your elbows up and out to both sides before returning to start position.

Tawna's Tip: "Pull the rope toward your face to keep it on the rear delt. If you pull it low toward your chest, it will be a back movement."



f AT LEAST ONE WEEK OF THE MONTH, f I HATE BEING A WOMAN. MY PMS SYMPTOMS ARE OUT OF CONTROL! I EXPERIENCE THE FULL GAMUT OF DISCOMFORT, FROM CRAMPING AND BLOATING TO BEING TIRED AND IRRI-TABLE AND THE SEXIEST ONE. DIARRHEA. IS THERE ANYTHING ${f I}$ CAN DO TO ALLEVIATE SOME OF THESE SYMPTOMS? FEELING SO AWFUL ALMOST ALWAYS MAKES ME SLIP UP ON MY DIET.

First off, be sure that you are getting adequate calcium and vitamin D, which is needed for calcium's absorption. According to the National Institute of Health, the daily recommended value for women between the ages of 19 and 70 is 1,000 mg/day for calcium and 600 IU/day for vitamin D. Calcium helps relax muscle, which can potentially help with the cramping, discomfort and diarrhea that you are experiencing. Next, be sure to get adequate fiber, about 25 to 38 grams a day to increase the water content of your stools. This should help with cramping and bloating as well as your mood since fiber helps decrease blood oxygen concentration, which when too high, inhibits endorphins. Speaking of endorphins, though you may not feel like doing it during this time of the month, daily exercise releases endorphins, dopamine and serotonin, all feelgood hormones that should make you feel better. Finally, be sure to get enough omega-3 essential fatty acids in your diet from sources like nuts, salmon, flaxseed, fish oil or krill oil supplement. Omega-3 EFAs have been show to decrease anxiety and inhibit prostaglandins, which trigger muscle contractions that contribute to cramping.

f I'M EMBARRASSED TO ADMIT THIS BUT EVERY TIME f I GET HOT OR EVEN NERVOUS. MY BUTT WILL SWEAT PROFUSELY. LEAVING MARKS ON MY CLOTHES AND EVEN WET SPOTS ON MY CHAIR OR BENCH, ${f I}$ WEAR COTTON PANTIES AND HAVE EVEN TRIED PUTTING DEODORANT THERE BUT NOTHING SEEMS TO HELP. f IT KEEPS ME FROM GOING TO THE GYM BECAUSE IT'S SO EMBARRASSING, HELP!

If it helps, I've been known to sport "SBC" (sweaty butt crack) at the gym from time to time myself. Most people will sweat there if the heat is turned up enough, but the volume of perspiration will vary from person to person. Instead of the cotton panties that you've tried, consider trying one of the many brands of dri fit underwear. They help to wick away moisture. Instead of the deodorant you tried for your bottom, try a super absorbent antifungal powder like Zeasorb-AF, which is commonly used for jock itch.

If neither of those suggestions work, consider visiting a dermatologist to rule out hyperhidrosis, which is a nervous system issue that causes excessive sweating and affects about 3 percent of the population. Your doctor may be able to prescribe a prescription strength antiperspirant that you apply at night twice a week, absorbs into the skin while you sleep and remains active for three or four days to help minimize sweating. Whatever you do, don't give up the gym! Sweating is expected. It shows you're working hard. Bring a towel and I bet no one will say a word.

I FEEL LIKE A HYPOCRITE TELLING MY 8-YEAR-OLD SON THAT HE NEEDS TO MAKE BETTER FOOD CHOICES AND GET MORE EXER-CISE WHEN TAKING ONE LOOK AT ME, YOU'D LIKELY TELL ME THAT ${f I}$ need to take my own advice. How to do ${f I}$ start making CHANGES WITHOUT MY SON FEELING OVERWHELMED?

I'm proud of you for recognizing the fact that if you aren't walking the walk yourself, you'll be hard pressed to inspire or motivate your son to change. Getting healthy together is truly the best approach. Fill your house with healthy meal and snack options and make it a point to exercise together. Walk around the block, ride bikes or even go skating. Making exercise fun is going to be important for your success. Also, try things like parking farther away from the grocery store and race to the door or make it a point to take the stairs whenever faced with an option.

Speaking of the grocery store, stock up on healthier, more

nutritious items like fruits, nuts, nut butters and cereal made with natural ingredients and that contain no more than five grams of sugar, preferably three grams or less. For kids, it's difficult to suddenly switch to all healthy foods. If you do that, they may rebel. Try an approach with snacks where you pair something healthy with more of an indulgence like strawberries dipped in peanut butter or dark chocolate sauce or sliced apples lightly drizzled with caramel sauce. Low-sugar fudge pops are often a welcome treat as well. Some other healthful options include baby carrots or celery with hummus or peanut butter and raisins (think ants on a log), string cheese, hardboiled eggs, a banana with pistachios in the shell (they take longer to eat), healthy frozen waffles and baked pita or corn tortilla chips and salsa. Try as often as you can to eat whole foods and avoid anything processed. You should be able to recognize the foods listed in the ingredients. If you don't, skip it. Also, cut out the sodas and sugary juices. You are better off with plain water or by adding flavor with fruits of your own (lemon, berries,

Finally, be consistent with bedtime. A lack of sleep will result in an increase in appetite for both you and your child. Aim to get at least eight to nine hours of sleep.

cucumber, etc.).

My hope is that these guidelines will help you and your son take big steps toward better health and increased energy in 2016. Be the example he needs and I'm sure you'll do great! ■

> Have a question for Jamie? E-mail it to editor@fitnessrxwomen.com.

JAMIE EASON MIDDLETON IS A FORMER NFL CHEERLEADER AND A FIGURE COMPETITOR. JAMIE HOLDS A BACHELOR'S DEGREE IN COMMUNICATION AND HAS APPEARED IN HUNDREDS OF MAGAZINES BOTH AS A MODEL AND A CONTRIBUTING WRITER. AS CREATOR OF THE POPULAR LIVEFIT TRAINER, JAMIE HAS HELPED HUNDREDS OF THOUSANDS OF PEOPLE REACH THEIR FITNESS GOALS.

• BY IFBB OLYMPIA FIGURE CHAMPION NICOLE WILKINS

TIPS for GETTING BACK ON TRACK in 2016

I hope you all had a wonderful holiday season and didn't get too out of hand with the treats. Ha! However, if you did I hope you enjoyed every bite of it and are ready to get back on track.

Remember, every time you misstep on your fit life journey, you have two choices: to keep walking backwards, which will continue to take you even further away from your goals, or to accept your lack of perfection as normal and forgivable, and take positive steps down the path that brings you closer to the future you want

With the New Year upon us, don't wait for the next day, week, month or even year to change your habits. Start now- but take it one day at a time. You can't go from the couch to a marathon or from fast food to cooking seven days a week all of a sudden. It is a surefire way to set yourself up for failure and disappointment. But you can do one, two or even a handful of small things that will help you regain your momentum and boost your motivation.

GIVE SOME OF THESE 11 "GET BACK ON TRACK" TIPS A TRY:

1. Avoid throwing in the towel after a few unhealthy meals. Just because you had one off meal, it doesn't mean the entire day can't be positive. Immediately think of the next healthy choice or lifestyle behavior you can make.

2. Forgive yourself. You haven't failed at anything and there is nothing to feel guilty about. In that moment of indulgence, it was exactly what you wanted— so never regret your decision.

3. Start scheduling your meals and exercise and get on a good routine. Write out what days you are going to the gym, what times and write up a plan for your meals. This will be the framework to get back on track.

Journal everything. Write it down, make it happen! I LOVE using my fit book. I track my meals, how I felt that day, my workouts and so much more. It really helps to see it on paper. You can purchase a fit book journal at www. nicolewilkins.com.

5 Stop stressing about the scale! Focus your energy and attention on your goals and the steps you are taking to get back on track to your healthy lifestyle. Things like: strength, energy, sleep, water intake, healthy meals, etc.

6 Prepare more meals at home and start cooking. You will have more control of the portions, oils and sodium that is added to your foods, which can make a HUGE difference in the way you look and feel.

Increase your lean protein. Foods like egg whites, grilled chicken, fish, tofu, whey protein, steak and salmon are all great sources of protein that will help keep you satisfied longer than just eating carbohydrates. Pair a carbohydrate with a source of protein.

8 Drink at least 4 liters of water daily. This will keep your energy up and your appetite stable. Making sure you stay hydrated will also help with keeping your skin fresh and help you focus better throughout the day.

9. Nothing helps more than having a strong support system. Surround yourself with people who will motivate and encourage you through your process.

10. Repeat positive affirmations daily. Things like: I have the willpower to make healthy choices today, or my body feels so good when I feed it healthy meals.

Become a member at www.nicolewilkins.com. For \$9.99 a month, every week I post new nutrition and training videos/blogs to help you along your fitness journey—food prep, full workouts, eating healthy on-the-go, recipes and more! Be sure to check it out!

The bottom line is, with healthy eating and exercising, as long as you're consistent and doing your best, you are moving in the right direction. If you expect perfection (and many of us do), you're setting yourself up for disappointment and guilt. We all slip up (yes I do, too!)—just don't let your slip-up last longer than a day. Get back on track right away!

You CAN do it. It isn't too late. Even if you're moving slowly, you'll be moving faster than everyone who is still sitting on the couch!

Until next time, keep living the Fit Life! ■

Visit www.nicolewilkins.com for full-length workout videos, recipes, meal plans and much more—including Nicole's NEW clothing line! For more information and

locations for PHAT Fitness Camps for women of all ages and athletic abilities hosted by Nicole Wilkins, check out www.getphatwithnicole.com!

Nicole Wilkins is three-time Figure International and four-time Figure Olympia champion, as well as a Met-Rx sponsored athlete and certified personal trainer. For more with Nicole, check out "The Fit Life" series on www.fitnessrxwomen.com. You can also follow Nicole on Facebook, and Twitter: @Nicole Wilkins.



BY BRET CONTRERAS, MS. CSCS

SINGLE-LEG TRAINING FOR GREATER GLUTE **GAINS**

Bilateral glute exercises are all the rage these days, for good reason- they elicit high levels of gluteus maximus activation and are well suited for progressive overload. That said, there's always room in your program for unilateral glute exercises, as single-leg training offers numerous benefits.

Many single-leg glute exercises are notorious for developing high levels of glute soreness following training, indicating that they effectively damage the glute fibers. Damage is one of the three primary mechanisms of muscle hypertrophy, so it makes sense to target this mechanism in training. Many individuals that experience back or knee pain with bilateral exercises such as squats or deadlifts find that they're able to progressively perform certain single-leg exercises without any discomfort. In addition, single-leg glute exercises are effective in eliminating and preventing gluteal strength imbalances from cropping up. Moreover, single-leg exercises consistently show superior muscle activity in certain muscles such as the hamstrings and gluteus medius when compared to their double leg counterparts, for example Bulgarian split squats versus bilateral squats.^{1,2,3} Finally, single-leg training has been

shown to lead to nearly identical strength and power gains when compared to double leg training.4.5 As you can see, single-leg training is the real deal.

It is true that single-leg training is initially more challenging for many individuals because it requires a greater balance component. However, this quality rapidly improves in the first couple of months of training. Furthermore, you can progress from more balanced singleleg variations to more challenging single-leg variations over time, thereby eliminating the coordination frustrations associated with embarking on single-leg training.

Every week, I challenge you to incorporate three different single-leg glute exercises into your training. One of these exercises will be a knee plus hip extension exercise that works the quads and glutes at the same time, one of them will be a hip extension exercise that works the hams and the glutes at the same time, and one will be a hip abduction exercise that targets the upper glutes. See below for exercise options.

KNEE + HIP EXTENSION

Single-leg Hip Sled Sled Push Step-up Lunge Bulgarian Split Squat Skater Squat Pistol Squat

HIP EXTENSION

Standing Cable Hip Extension Single-leg Romanian Deadlift Single-leg Foot Elevated Glute Bridge Single-leg Shoulder Elevated Hip Thrust Single-leg Back Extension **Quadruped Donkey Kick** Single-leg Shoulder and Foot Elevated Hip Thrust

HIP ABDUCTION

Side Lying Hip Abduction Standing Cable Hip Abduction Band Sumo Walk Band Monster Walk Band Seated Hip Abduction Machine Seated Hip Abduction Standing Hip Hinge Abduction

If you're a beginner, you may opt for the single-leg hip sled, the standing cable hip extension, and the side lying hip abduction, as these are simple exercises that are well suited for beginners. If you're an intermediate, you may opt for the Bulgarian split squat, the single leg RDL and the band sumo walk. If you're advanced, you might aim for the pistol squat, the single-leg shoulder and foot elevated hip thrust and the standing hip hinge abduction. Make sure you tailor the difficulty of the exercise to your level of fitness.

It's important to note that many of these exercises have numerous variations that make them more or less challenging. For example, the lunge can be performed in a static position with just bodyweight for beginners, or with a barbell racked on the shoulders while standing on a small step and stepping backwards (deficit reverse lunge) for advanced lifters. The single-leg RDL can be performed with a light dumbbell while holding onto a beam to assist with balance for beginners, or with a heavily loaded barbell for advanced lifters.

Keep performing your bilateral glute exercises such as hip thrusts, squats and deadlifts, but add in a few single-leg glute exercises for better strength symmetry and gluteal hypertrophy.

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Bret Contreras is the founder and owner of the world-renowned research and training facility, The Glute Lab. Considered by many as the world's foremost expert on glute training, Bret is also the inventor of the glute-sculpting machine called the Hip Thruster, the coauthor of Strong Curves, the author of Bodyweight Strength Training Anatomy, the cofounder of Get Glutes, the cofounder of Strength & Conditioning Research, and editor in chief of Personal Trainer Quarterly. Bret is currently pursuing his Ph.D. in sports science at AUT University. Check out Bret's popular blog at www. BretContreras.com and his FitnessRx online column at www. fitnessrxwomen.com/author/bret-contreras.



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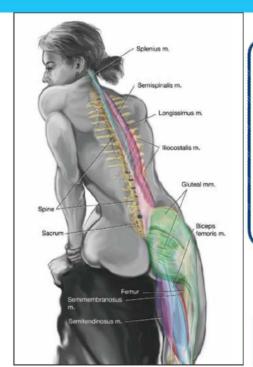
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FitRxCoolDOWN / BODY PARTICULARS

BY STEPHEN E. ALWAY, PH.D., FACSM

ILLUSTRATIONS BY WILLIAM P. HAMILTON, CMI



We all know people who think that the challenges of everyday life are enough to keep their backs pain free.

Unfortunately for those folks, the value of a preventative exercise strategy will only be appreciated after a shearing injury. Often injury arises from a simple thing like turning around in the car to get something in the back seat, picking up a box from the floor at work, sitting for a long time¹ or just plain old fatigue.² That does not mean that all back injuries can be avoided, but the likelihood for a serious injury from day-to-day or weekend sport activities is significantly lower if the back, gluteals and hamstrings are strong.^{3,4}

Nevertheless, a sloppy exercise form could itself be responsible for the pain you are trying to avoid, so proper technique is crucial for back health.

LOWER YOUR RISK OF BACK FATIGUE AND INJURY With

GOOD MORNINGS

Lower Back Structure and Function

The good morning exercise strongly activates the back, hamstrings and gluteal muscles. The long head of the biceps femoris muscle of the hamstrings attaches to the ischial tuberosity^{4,5}, which are the bony parts of your posterior pelvis that you sit on when you are in a chair. The fibers of the short head of biceps femoris begin on the lower one-third of the femur bone just above the knee. Both heads of the biceps femoris muscle fuse into a thick tendon, which crosses the lateral side of the knee joint to attach to the fibula bone (and some ligaments).5 The semitendinosus muscle fibers of the hamstring group attach to the ischial tuberosity and insert into a cord-like tendon that crosses the knee joint posteriorly to anchor on the medial side of the superior part of the tibia bone.5 This hamstring muscle crosses the knee and the hip joints posteriorly⁵ and can both extend the thigh at the hip joint (which is its major role in the good morning exercise) and flex the leg at the knee joint.

The gluteus maximus is the largest and thickest of all the hip muscles and it is strongly activated by the good morning exercise. Its muscle fibers attach on the ileum of the hip bone, and the sacrum. It inserts on the posterior part of the femur bone of the thigh and on the iliotibial band of the fascia latae, a tough band of connective tissue running from

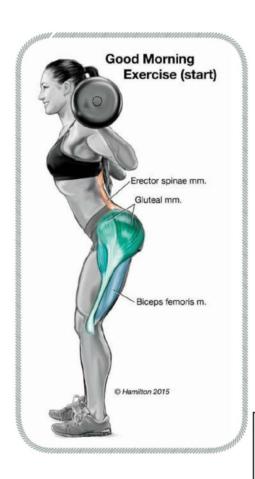
the hip down the lateral side of the thigh to the knee. The gluteus maximus extends the thigh. When the thigh is fixed and the hip joint is free to move as it is in the good morning exercise, the gluteus maximus muscle can also help to extend the lower back. The smaller gluteus medius and gluteus minimus muscles abduct the femur (brings the thigh to the side) and provide important stabilizing functions during the torso flexion and extension parts of this exercise.

The erector spinae muscles, and especially their attachments in the lower back region are also activated by good morning exercise. This muscle group extends the vertebrae of the spine.4 The iliocostalis muscle is the most lateral of the erector spinae group. It begins from the iliac crest of the hip bone, and inserts into the ribs.^{4,5} The longissimus muscle runs almost the entire length of the back, from the lateral bony projections of the vertebrae called transverse processes, to transverse processes of vertebrae, which are more superior.6 The spinalis muscle runs up the center of the back.7 It arises from the spinous processes (small projections that lie directly in the center of the vertebrae) in the lumbar and lower thoracic regions and they attach on the spinous process of the thoracic and neck (cervical) regions.8 When weak, the erector spinae muscles contribute to back pain and poor posture.

The erector spinae group acts as the primary mover to extend the back at the

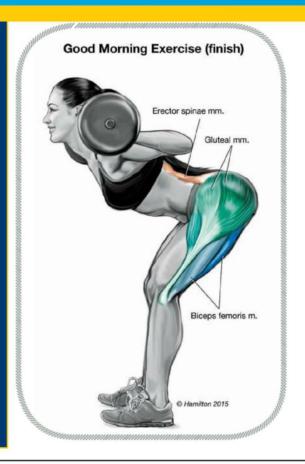
hip and move the torso upward and it controls the downward movement to the final position. However, the hamstring and gluteal muscles are both strong hip extensors and they will also be very active in this exercise. After your set is done, take the time to stretch your hamstring and gluteal muscles. You can do this by standing, straightening your knees and trying to bring your head and chest toward your thighs for four or five stretches held for 10 seconds each. If your hamstrings become too tight (e.g., from sitting a lot in the day) this could also contribute to lower back pain1; however, the stretches between sets will eliminate these tight muscles.

Both the up and down phases of each repetition should be slow and controlled. After only a few weeks, you should find that the good morning exercise has revitalized your lower back with the bonus of firming your gluteals and forming more shapely hamstrings. Your back stiffness and fatigue that you get from sitting at a desk for long periods of time will all but vanish. Furthermore, your risk for injury will be significantly reduced, and this is a quality of life issue. Don't be one of those who wish they had done some direct back exercises, but only realize their mistake after it is too late, and they have hurt their back. You can do something positive by engaging good mornings at whatever time of the day you train, and thereby avoid becoming a statistic for back pain or injury.



EXERCISE FORM

- 1. Place a light barbell across upper back. Ensure that the bar is not placed over the neck. Take an overhand grip on the bar to hold the bar in place.
- 2. Stand upright with your feet shoulder-width apart. Bend the knees just slightly and then lock them in this position.
- 3. Flex the torso forward at the hips without bending your knees. Continue bending forward but stop when your upper body is parallel to the floor. Keep your eyes and head up throughout the forward flexion.
- 4. Pause for one to two seconds at the position with your back parallel to the floor, then reverse the movement by extending the trunk to return back up to starting position,



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• BY MARIE SPANO, MS, RD, CSCS, CSSD

New Study:

LOW-FAT DIETS DON'T WORK

Conceptually, gluten free, the Paleo approach and ketogenic diets are very easy. These diets inherently take the decision-making process out of the equation because there is no middle ground- the food is either on your diet or it's not. You don't have to measure portion sizes, log calories or determine if you have to eat less at dinner to make up for a lunchtime splurge. The desire for a simplistic and concrete answer to weight loss has led to a decades-long battle about the best macronutrient composition for weight loss. Over the past 100 years, we've ping-ponged back and forth between high-carbohydrate. low-fat diets and high-fat, lowcarbohydrate diets. Experts offer equally persuasive arguments for both ends of the spectrum- either low-fat or high-fat. In an attempt to determine which diet is best for weight loss, one of the latest studies collected and analyzed the research on low-fat and high-fat diets.

The Study

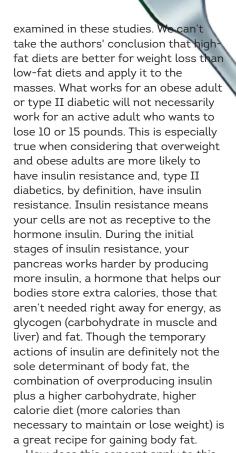
A systematic review and metaanalysis, which combines the results of several studies, published in the journal The Lancet, compared the results of intervention studies ≥ 1 year in length where participants were placed on lowfat diets, low-carbohydrate diets, other high-fat dietary interventions or they continued consuming their usual diets. The authors included 53 studies in their analysis. Low-fat diets ranged from < 10 percent of calories from fat to ≤ 30 percent of calories from fat. The diet interventions used range from providing instructions at the start of the study only and expecting participants to follow the diet plan, to regular counseling sessions with dietitians, food diaries and cooking lessons, to actual feeding studies where participants were given much of their overall food intake. Some studies coached participants to cut calories

while others, including those put on low-carbohydrate Atkins-style diets, were told to eat until they were full without consciously restricting calorie intake.

The authors sliced and diced the data before coming up with some conclusions. They analyzed results from 13 trials that examined weight maintenance as well as studies that didn't include weight loss as a primary goal. In these studies, low-fat and highfat diets led to a similar amount of weight loss. Low-fat diets were superior only when compared to the subjects' normal diet. So, there was no clear frontrunner. The tiebreaker came from an analysis of 35 weight-loss trials, 29 of which were conducted using adults who were overweight, obese or had type II diabetes. Overall, there was no difference between low-fat and highfat diet interventions. As expected, low-fat diets led to greater weight loss compared to groups following their usual diet. Yet the headlines that were plastered in large font on news websites and sprinkled over Facebook by high-fat diet advocates were pulled from a comparison between low-fat diets and high-fat diets that varied by more than 5 percent of calories. In this subset of the data, higher fat diets were the clear winner, leading to significantly greater weight loss after a year than low-fat diets. For added support, the authors cited two other meta-analyses that found low-fat diets do not improve weight loss results compared to high-

The End of Low-Fat Diets?

Based on the results, the authors suggest low-fat diets shouldn't be the go-to recommendation for weight loss. However, a closer look at the actual data reveals a few other interesting findings. First off, the results of this study are mainly applicable to overweight, obese and type II diabetics—the primary populations



How does this concept apply to this study? In these population groupsoverweight, obese and type 2 diabetics, lowering the carbohydrate content of the diet may lead to greater weight loss initially (if they can follow the diet), which can help adherence. Research backs up this point by showing that weight loss over the first six months on a diet is the main predictor of both weight-loss success and sticking to a diet over the long term. People "fall off" the diet in studies just like they do in real life, especially if they don't have regular nutrition coaching. In other words, if you are getting results, you are more likely to stick with the program. This makes a lot of sense, in

FAT ATTACK

IF YOU WANT TO LOSE WEIGHT, CHOOSE A LOWER CALORIE DIET PRIMARILY BASED ON HIGH-QUALITY FOODS OR CREATE YOUR OWN PLAN THAT FITS INTO YOUR LIFESTYLE AND YOU CAN STICK WITH IT.

weight loss and in life. However, both the results from this study and the concept of insulin resistance shouldn't be used to throw out low-fat diets completely.

Focusing Only on High-Fat or Low-Carb is Pointless

Rating a weight-loss diet by macronutrient composition alone—low-fat, high-carbohydrate or high-fat, low-carbohydrate—isn't very helpful for two reasons: 1) the type of fat and carbohydrate you eat makes a difference and 2) adherence and calories trump everything else. Put both of these together and you have a winning combination.

High-fat, low-carbohydrate diets have been used for several decades. These diets initially included plenty of foods high in saturated fat with little distinction made between bacon and salmon. Over time, these diets have evolved based on the latest scientific research and common sense. We now know that diets higher in polyunsaturated fats, the kind found in fatty fish and several types of plant-based oils including corn and sunflower oil, as opposed to diets high in saturated fat, lead to less belly fat.

When the tide turned to the low-fat craze of the 1990s, many people heard the word "fat" and ran, without paying attention to the quality of carbohydrates they were eating. The marketplace responded with supermarket store shelves overflowing with high sugar, highly refined yet low-fat foods. When this diet didn't work and our collective waistline continued to expand, some blamed carbohydrates as the root cause of obesity. It wasn't the carbohydrates but instead the *type* of carbohydrates we were eating. A diet primarily composed of high-fiber plant-based foods makes weight loss and weight maintenance a lot easier than highly refined, high sugar foods.

Putting it All Together: A Recipe for Weight-Loss Success

In addition to food quality, including the types of fats and carbohydrates you are consuming, overall calories matter. You must consume fewer calories than you burn each day to lose weight. Also, adherence matters. In this meta-analysis, higher fat diets fared better than low-fat diets. However, the results were hardly earth shattering. Participants on low-carbohydrate diets lost about 2.2 pounds more weight after one year versus those on a low-fat diet. A 2.2-pound difference in weight loss after one year on a diet isn't very impressive, especially considering many of the subjects were overweight or obese to begin with. What's more disappointing than the paltry 2.2-pound difference between the low-fat and highfat diets after one year is the total average weight loss in the studies designed for weight loss- a mere 8.25 pounds after one year. Instead of declaring high-fat diets a clear winner over low-fat diets, we should be asking why people can't stick with diets over a long period of time. Previous research has found any reduced calorie diet works as long as you stick with it. If we know it works, why aren't we able to stay on a diet? This is the biggest research question of all and one that anyone attempting to lose weight should ask themselves.

If you want to lose weight, choose a lower calorie diet primarily based on highquality foods or create your own plan that fits into your lifestyle and you can stick with it. Add permission to alter your plan as often as you need to based on changes in your lifestyle, motivation and results and you are more likely to be successful than if you fall into the trap of solely focusing on macronutrients.

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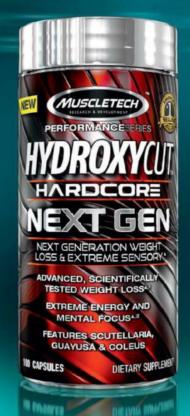
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REACH NEW HEIGHTS WITH THE

VersaClimber

Have you seen that machine in the gym that mimics climbing? If you haven't tried it yet, you'll want to if your goal is to increase the intensity of your workouts.

The piece of equipment is the VersaClimber, and many people are calling it one of the hardest– but most effective—machines to train with in the gym. In short, the VersaClimber is a vertical climbing machine—except no actual climbing takes place. It's effective because it's been shown to burn lots of calories in a short amount of time. And while you're increasing your heart rate and cardio, you are also working your upper and lower body.

WHY IT WORKS

Trainer Nick Tumminello, the owner of Performance University in Fort Lauderdale, Florida and the author of the book *Strength Training for Fat Loss*, likes the VersaClimber so much that he works with the company as a fitness expert, providing information on VersaClimber machines and doing YouTube videos about them.

"[The VersaClimber is] just another way to do various work and conditioning," said Nick. "What's unique about it is you can immediately pick up the pace. ... With a VersaClimber, it's grab and go, so you can adjust the resistance, but I can just say 'hey, go faster' and you can immediately increase the pace without having to constantly hit buttons and adjust. It's extremely low impact but extremely high intensity."

The VersaClimber emphasizes your arms, stride, pushing and pulling on the upper body and also can put emphasis on your legs—driving down and also the catching on the

upswing. Or, the movements can be neutral, where you have an equal focus on arms and legs.

The VersaClimber measures the amount of flights you are climbing. One way to use it in your workout is to go at a certain intensity for a certain time frame, for example, said Nick. Just one of the other options is to set a goal of 200 flights and cover that in as little time as possible, and try to beat that time. In other words, there are quite a few options for getting a good workout with the VersaClimber. Plus, it's not difficult for beginners to get the hang of it.

"The learning curve is virtually zero," said Nick. "And it's back friendly."

Although the VersaClimber has been around for 35 years, it's become more popular lately because it allows users to challenge themselves, said Brett Collins, who does sales, marketing and advertising for VersaClimber.

"It's unique," said Brett. "[People] love to hate it. I think it's becoming more popular now just because of the wave of ... CrossFit and really pushing yourself [in the gym]."

Although 55 percent of purchases are by individuals for home use, there are now also gyms that cater almost entirely to the VersaClimber, like Rise Nation in West Hollywood, California, said Brett.

"It's had a bad rap in health clubs. If you go to a health club, you will see two or none, and it has a preconceived notion of being so difficult," said Brett. "But, it's such an effective piece ... It doesn't do the work for you like the elliptical. It really combines upper and lower body against gravity."

VersaClimber Basics

Here are some tips for getting the most out of the VersaClimber:

FOOT PLACEMENT. The VersaClimber has straps, so you can choose how much control you want in the workout. With the VersaClimber, you have a few options when it comes to foot placement. If you strap the band around your shoe tightly, it will stay in place. If you keep it looser, you'll be able to adjust your foot placement during the workout.

FOOT PLACEMENT VARIATIONS:

- Center: This allows for equal distribution and targets the glutes, hamstrings, quads, hip flexors and calves.
- Ball of foot in center: Mostly targets the quads but also hits the glutes and hamstrings.
- Heel of foot in center: Targets the hamstrings and glutes.

UPPER AND LOWER BODY POSITION.

If you are new to the VersaClimber, try shorter steps so that you get used to the machine. Deeper steps will use the entire leg, making it more challenging but effective.

Target the calves more by using a looser strap on the footpad. For upper body, the higher you place the bars, the more intensively you will work your upper body.

HAND POSITIONING. An overhand grip hits the chest, delts lats, biceps and triceps. An underhand grip works the biceps much more.

WORKOUTS

Nick Tumminello shared a few of his favorite VersaClimber workouts:

- 30, 20, 10: This workout involves stride length. Go for 30 seconds with a neutral stride length, 20 seconds with an exaggerated stride, and then 10 seconds with a short-stride that's an all-out sprint. After finishing, repeat again right away, starting with the 30-second neutral-stride length.
- Climb Carry: This one can be done for time or distance. Go for one minute at a certain pace, or go for 100 to 200 flights. Then grab dumbbells that are fairly heavy for you to use (try around 30 pounds or so). Do a farmer's walk with those dumbbells for 45 seconds to one minute. Then get back on the VersaClimber and repeat. Complete three to five rounds, depending on your fitness level.



GET SCULPTED: 4 EFFECTIVE MOVES ON THE TRX® SUSPENSION TRAINER

If you haven't tried the TRX® suspension training system, most likely you've at least seen it in your gym or heard about it (and now the TRX® Home Suspension Trainer is available to suit an even broader audience). Suspension Training®- the innovative approach to physical conditioning that has become a global fitness phenomenon- was created by Randy Hetrick, who is also the founder of the popular TRX® suspension training system- a scalable tool that can deliver a total body workout and help build a strong core.

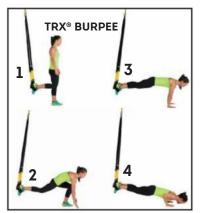
In fact, one unique thing about the TRX® suspension training system is that it is used by people of all levels. From pro athletes and military personnel to beginners to fitness, people from all walks of life are turning to the TRX® suspension training system to help them meet their fitness goals.

Randy came up with the idea for his suspension training system when he was a U.S. Navy Seal deployed in Asia. "I had a cool harness that I created on the Seal team that my buddies loved; it was a very primitive version that I brought to the market," he said.

After completing business school at Stanford, Randy went to work building his company at age 36. "I must have pitched to 200 gyms out of my backpack. I would call, set up a meeting and I would beg for 30 minutes of a hour-long staff training to talk about this cool new training tool, because functional training hadn't even arrived yet."

In addition, it all recently came full circle for Randy when he appeared as a judge on the Spike TV show "Sweat Inc," (along with Jillian Michaels and Obi Obadike), which was a competition seeking to find the next big thing in fitness. Each episode featured three entrepreneurs and focused on a specific fitness category such as circuit training, interval training, platform devices, etc.







"I was these guys, so I really felt their pain, their excitement. When they did great I was thrilled for them," said Randy, about the entrepreneurs on "Sweat Inc."

So what sets the TRX® training system apart? For one thing versatility, said Randy. "It's versatile not only in the types of exercises ... you, the user, determines how little or much you use it ... and if you load too much, you can reduce that load instantly," he said.

4 TRX® MOVES TO TRY:

1. TRX® CRUNCH

ADJUSTMENT: Mid-calf.

START: Both feet in foot cradles, on forearms/hands with legs straight, active plank.

MOVEMENT: Bring knees toward chest.

RETURN: Extend legs back toward anchor point in a strong plank position.

2. TRX® BURPEE

ADJUSTMENT: Mid-calf.

START: One foot in foot cradles(s), and centered with anchor point, shoulders over hips.

MOVEMENT: Drive suspended knee back, lower hips until back knee is two inches from ground, place hands on the ground, hop grounded leg straight back to a plank, perform push-up.

RETURN: Hop grounded leg forward, explode up to a jump.

3. TRX® SIDE PLANK

ADJUSTMENT: Mid-calf.

START: Lie on side, forearm/hand stacked under shoulder, hips stacked, heel of top foot touching toe of bottom foot.

MOVEMENT: Lift body, keep weight over forearm/hand, keep

RETURN: Lower hip to ground, keep shoulders and hips stacked.

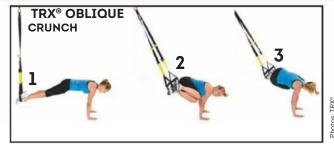
4. TRX® OBLIQUE CRUNCH

ADJUSTMENT: Mid-calf.

START: Both feet in foot cradles, on forearms/hands with legs straight, active plank.

MOVEMENT: Drive both knees toward the left shoulder.

RETURN: Extend legs back toward anchor point and re-establish a strong plank position, prior to repeating to the right shoulder.



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Training hard and eating right are both essential to achieving your goals, of course. But there are also fatburning supplements that can help you along the way, too! That's where **Fastin®** from Hi-Tech Pharmaceuticals comes into play.

Hi-Tech acquired rights to **Fastin®** from King Pharmaceuticals and reformulated **Fastin®**, and now expect it to be their top weight-loss aid. **Fastin®** is a pharmaceutical-grade dietary supplement for weight loss, and has both immediate and delayed release profiles for appetite suppression, energy and weight loss. It is comprised of nine pharmaceutical-grade fat loss catalysts at precise ratios in order to achieve its extraordinary results.

For several years, Hi-Tech has been investigating many plant extracts and other natural substances for their ability to reduce adipose tissue mass. As a result, H-Tech has identified a number of agents that may induce apoptosis of adipose tissue.

Fastin® is not only effective for weight loss, but it also helps to promote energy as well. So you'll be burning fat but also have the energy to get through your workouts like never before. So if you need a supplement that's really going to help take you to the next level in your fitness this year, read on!

WHAT'S INSIDE:

Below are just a few of the effective ingredients found in the proprietary formula in **Fastin®**:

- R-Beta-methylphenylethylamine HCL: This compound stimulates appetite suppression, energy and fat loss.
 - Methylphenylethylamine tartrate: a rising star of the

fat-loss industry.

- N-methyl-phenylethylamine: Stimulates fat burn and energy.
- **Theobromine:** Research that shows it has a positive effect on fat loss, appetite suppression and mobilization of fatty deposits.
- Phenylethylamine HCL: Naturally present in human fluids and tissues, it has the ability to simulate the central nervous system without causing a jittery feeling.
- Synephrine HCI: Derived primarily from the fruit of a small citrus tree and used primarily in fat loss.
- Caffeine Anhydrous USP: Stimulates central nervous system and metabolism.

A WINNING COMBINATION

Fastin® separates itself from the other fat-burners on the market because of a few key reasons:

- A sophisticated manufacturing process that utilizes a dual delivery system technology for specific control of rapid and sustained release of its active compounds.
- A proprietary active compound formulation that is superior to the existing field of fat loss compounds.
- A novel approach to fat loss through triggering fat cell death (apoptosis).

GIVE IT A TRY

If you want to start 2016 out right by burning more fat and getting in better shape, get ready to work hard. But if you need a little extra push to reach your goals, **Fastin®** is the fat burner you'll want to try. For more information, visit www. hitechpharma.com.





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SPLIT- VS. FULL-BODY ROUTINES:

Which Is Best for Lean Muscle?

Going back to the early days of bodybuilding, competitors routinely trained using full-body routines. The idea was that frequently stimulating muscles throughout the week was the best way to increase lean muscle without overtraining.

By the 1960s, training philosophies began to change. Full-body routines gave way to training splits, where the goal is to work a muscle using multiple sets and exercises, and then afford the muscle with as much as a week's recovery before it's directly trained again.

More Training Volume Per Muscle Group

The theoretical benefit of a split routine is that it allows total weekly training volume per muscle group to be increased, while providing muscles greater recovery for growth.³ In addition, working a muscle with a high training volume in a given session heightens intramuscular metabolic stress¹, which in turn is believed to enhance the hypertrophic response.⁹ The combination of these factors are thought to ultimately lead to greater long-term muscular gains.

Although a case can be made for using either full- or split-body routines to increase lean muscle, an evidence-based opinion can only be formed by first evaluating the results of controlled research. Given that training frequency is one of the most important training variables, you'd think there'd be a ton of studies conducted on the topic, right?

Wrong!

Until recently, only one study actually compared the muscle-building effects of training muscles one versus three days per week.⁷ Subjects either performed three sets per exercise in a

single weekly session, or one set per exercise spread out over three weekly sessions for 12 weeks. At the completion of the study period, results showed greater increases in lean body mass for the three-day-a-week group, indicating a benefit of training muscles more frequently. While the study is intriguing, there are some inherent limitations that hinder the ability to draw practical conclusions. For one, subjects performed only three sets per muscle group per week- far below what most serious fitness enthusiasts typically include in their training programs. For another, muscle mass measures were assessed by the skinfold technique, which lacks precision in determining true changes in hypertrophy over time. The applicability of the

study to serious lifters seeking to maximize muscle building is therefore limited.

'Bro Splits' vs. Full-Body Routines

To gain clarity on the topic, my lab recently carried out a controlled study that compared muscular adaptations in a typical "bro split" versus a full-body routine in well-trained lifters. 11 Both routines comprised 21 different exercises that targeted the major muscle groups using multi-set routines. Those in the split routine performed chest and back on day one, lower body on day two and shoulders and arms on day three. Alternatively, the full-body routine consisted of performing one exercise for all the major muscle groups

during each session. Training was carried out three days per week for eight weeks. Total volume was equated between routines so that any differences in muscle development could be attributed directly to the effects of training frequency. Changes in muscle size were assessed by ultrasound to provide direct hypertrophic measurements. Subjects had more than four years of lifting experience, thus ruling out any issues from the "newbie effect."

The surprising results challenge current training practices.

Those performing the full-body routine experienced significantly greater increases in biceps growth compared to split-body training (6.5% versus 4.4%, respectively). Although differences in the other muscles analyzed were not statistically different, the increases favored the full-body routine for both the triceps (8.0 versus 5.0%, respectively) and the quads (6.7 versus 2.1%, respectively). Moreover, determination of effect size— a

versus 2.1%, respectively). Moreover, determination of effect size— a statistical gauge of the meaningfulness of results— showed a clear advantage for the full-body routine in all of the muscles we measured. These findings suggest a benefit to training a muscle more often over the course of a week.



Time to Ditch the Split?

There is a logical basis to training muscles more frequently each week. This is consistent with the fact that muscle size is regulated by the dynamic balance between muscle protein synthesis (MPS) and protein breakdown. ¹⁰ Simply stated, when MPS is greater than breakdown, there is a net accumulation of skeletal muscle mass; the more you can maintain high levels of MPS over time, the greater

Research shows a benefit to training muscles frequently throughout the course of a week.

your gains. Research shows that the time course of muscle protein synthesis (MPS) lasts about 48 hours or so following a lifting session. It's therefore reasonable to conclude that training a muscle every few days would keep MPS consistently elevated, and thus have a positive effect on muscular development.

Before you ditch the split, however, it's important to consider a couple of things. First and foremost is the novelty factor. Prior to training, we conducted pre-study interviews about training history. During these interviews, 16 of the 19 subjects reported regularly employing a split routine, with each muscle group trained once per week. Research indicates that simply changing program variables so that a new stimulus is provided can enhance muscular adaptations. This raises the possibility that those in the full-body training group benefited from the unaccustomed stimulus of training muscles with a greater weekly frequency.

Train Muscles More Frequently to Maximize Growth

Perhaps more importantly, the study needs to be taken in the context that volume was equated between groups. A primary benefit to training with a split routine is that it allows more volume to be packed into workouts over the course of a week. Assuming 48 hours is afforded between training a given muscle group— a generally accepted tenet— then full-body training limits you to three weekly sessions. Alternatively, splitting the routine lets you up the frequency of sessions per week, and thus allows you to achieve more volume per muscle, per session. Given that higher training volumes are strongly associated with greater lean muscle growth^{5.8}, the potential value of training splits should not be discounted.

Bottom line: Research shows a benefit to training muscles frequently throughout the course of a week. Although evidence is somewhat limited, it would appear that at least twice-weekly stimulation of a given muscle is beneficial to maximize lean muscle growth. This can be accomplished with an upper body/lower body split carried out four days per week (i.e., two days on/one day off, two days on/two days off) or a three-way split (i.e., push/pull/legs) performed six days per week (i.e., three days on/one day off). It's also possible that periodizing training frequencies might provide a means to maintain the novelty of the training stimulus. Accordingly, consider integrating full-body workouts into your programming over the course of a training cycle to enhance the hypertrophic response.

Brad Schoenfeld, Ph.D., CSCS, FNSCA, is widely regarded as one of the leading authorities on training for muscle development and fat loss. He has published over 60 peer-reviewed studies on various exercise- and nutrition-related topics. He is also the author of the best-selling book, *The M.A.X. Muscle Plan*, and runs a popular website and blog at www.lookgreatnaked.com.

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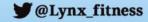




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• BY LISA STEUER



RETOX WITH LAUREN IMPARATO

THE YOGI'S NEW BOOK IS A REALISTIC GUIDE TO A HEALTHY LIFE

Let's face it— we all live very busy lives, and sometimes it can be difficult to *really* take care of ourselves. As a result, we're full of stress and anxiety, and may have sleeping problems as well as backaches. So what's the solution?

Retox: Healthy Solutions for Real Life, is a new book (set to be released in February) by Lauren Imparato, a health expert and owner of wellness lifestyle brand and Manhattan yoga studio I.AM.YOU. In her book, Lauren tackles such topics and explains the relationship between mental health and happiness as well as common sense nutrition, practical mindset skills, and a brand of yoga she designed for her hundreds of clients who are driven go-getters, like herself.

Lauren's own story is an interesting one. She is a self-described "California girl raised on athletic fields, basketball courts, running trails and in swimming pools" who actually once despised yoga and instead was a "running addict." After graduating from Princeton and moving to New York City to work at Morgan Stanley, she began taking yoga classes—reluctantly, she admits. In fact, she only took up yoga because her boyfriend (now husband) suggested she try it. This was before yoga had become as mainstream as it is today.

"I thought it was so ridiculous and wanted to prove him wrong," she said.

But what ended up happening, after she struggled with yoga for a bit, is that she stuck with it. "Slowly but surely, I got addicted," Lauren said, adding that she felt *different* with a regular yoga practice than she had with any other form of exercise.

Eventually, Lauren started studying everything she could about yoga and its origins, and began giving her own classes to friends and co-workers. Lauren also immensely studied the physical benefits based on body types, ailments, physical goals, etc.

"My husband jokes around that I have a closet Ph.D. in yoga. I took yoga seven days a week and never missed it."

In the spring of 2009, Lauren resigned from her job as vice president at Morgan Stanley to launch I.AM.YOU. Since then, Lauren has become revered as one the top lifestyle, wellness and yoga experts, and has been profiled on CNN, Bloomberg and more. Lauren's yoga classes have been named "New York's best" and her teaching as "top of NYC instructors."

The I.AM.YOU. Approach

So what makes I.AM.YOU. and Lauren's approach to yoga so different and keeps people coming back? Through I.AM. YOU, Lauren unites the ancient Tibetan and Indian Hindu philosophies of yoga with modern day, real life as the basis of her teachings and writings in yoga, self help, nutrition and more, and there is also special attention to anatomy.

This and more is discussed in Lauren's new book *Retox*. It's truly a real-world, modern approach to yoga and healthy living, with respect to the traditions of ancient yoga. The book includes recipes, back pain prevention and causes, stress, anxiety and sleep deprivation management, creating the ideal body image and much more. Particularly, she discusses in the book how powerful your negative and

positive thoughts can be.

"The mind is the most important muscle of the body— the most important aspect of the body," Lauren said. "It does dictate every second of your existence."

Lauren also discusses the downfalls of strict dieting, and how to eat well without depriving ourselves, which she says can often just lead to failure and unhappiness (sharing, for example, her personal experience with a meatless diet and how she realized it wasn't right for her). But, as Lauren points out, there are ways to deal with sugar and caffeine cravings, and you don't have to give up everything you love to be healthy—it's all about finding a path to a healthy life that works for you. The book is filled with great advice on how to get there and navigate nutrition every day.

"I don't believe you can force yourself to eat a certain way for your life," Lauren said. "The human body requires different things at different times."

Desk Fixes

Throughout the book, Lauren includes "desk fixes" – yoga poses adapted for use when you're sitting at your desk in the office or even in your car.

Here are just a few of the desk fixes included in Lauren's book. For much more, be sure to pick up the book when it comes out in February and visit www.iamyoustudio.com.



DESK GARLAND: Slide to the edge of your seat. Place your feet on the floor touching each other. Drop your knees out to the sides. Inhale, sit up tall. Exhale, fold in between your legs and let your head hang. Breathe here as long as you can.



ADRENAL RELEASE: Place your hands on your mid back, fingers facing down. Try to align your hands with your kidneys. Inhale, imagining the breath going down toward your hands. Exhale, gently press the heels of the hands into the back. Breathe. To take it a bit further, inhale counting to five. Exhale, counting to five. Repeat for 30 to 60 seconds.



ENERGY BREATH: Lift your arms straight up and open them into a V. Inhale to a comfortable level. Begin short, sharp breaths out of the nose, where the inhale is simply a reaction to the exhale, as the diaphragm pumps on the abdominal wall. It should feel somewhere between sneezing and blowing your nose (if you are pregnant, skip khapalabhati). Keep these up for one minute, energizing your body with each pump.



BACK RELIEF LIFTS: Come to the edge of your chair. Place your hands on the seat by your hips or on the armrests. Inhale, lift your butt up, pressing down into your hands, releasing the muscle and tension from the lower back. Stay there for several breaths, as long as it feels good, and repeat frequently.

• BY LISA STEUER

ROWING IS STILL ON THE RISE

If you do CrossFit, you're likely already familiar with the rowing machine. But in recent years, the rower has been appearing not only in CrossFit boxes but also in typical big-box gyms, and there are also more and more gyms devoted entirely to rowing.

In fact, at least seven indoor rowing studios have opened up in New York and New Jersey over the last two years and more are popping up in other areas of the country as well, according to The New York Times.

Why Row?

Those who row say that it's a great tool because rowing results in a longer, leaner physique while promoting fat loss and developing sleek muscles. In addition to being a good cardio workout, it also works your legs, back and arms, which is something you don't typically get from other similar cardio machines.

Rowing also increases flexibility and balance, and can even be used in rehab for an injured shoulder or back. Plus, many athletes use rowing to enhance their performance in other sports because the machines can teach body discipline and help to build a strong core. In particular, rowing is growing among runners who are looking for an effective high-intensity replacement exercise.

Research is beginning to support the benefits of rowing as well. A study published in the *Scandinavian Journal of Medicine and Science in Sports* compared cycling and rowing. The study involved 13 young moderately trained males who performed a three-minute continuous exercise test to exhaustion on separate occasions on an electronically braked cycle ergometer and an air-braked rowing ergometer. On two other occasions, the participants performed a 20-minute steady-steady exercise session. It was found that there was a higher rate of fat oxidation during rowing compared with cycling ergometer exercise.

A Row House

The bottom line is that rowing may be more effective than cycling— and Debra Strougo Frohlich agrees. Debra owns Row House, which has several locations in New York City, with her husband/business partner. Row House is just one of the many specialized gyms that now cater to rowing classes and technique.

Rowing is effective because it's "low impact, full body, great for core, lower body and upper body— amazing for posture and people rehabbing knee and ankle issues," said Debra.

Newcomers to Row House are taught the basics, said Debra. "Bad technique will not create the benefits that we are looking to create—and won't bring the clients back for more! Good technique makes it addictive!"

And while there is a range in ages of clients who attend Row House classes, there is also an especially large 50- and 60-year-old crowd, said Debra. "The old and young know about the amazing low-impact yet full-body benefits of the sport, and that's what makes us attract a larger age range," she said. "Some of the older ones are fitter than the younger ones. We also get lots of men and women- more men probably than other group fitness!"

So why has it become so popular over the last few years? "Because people like us are making sure that it is not the forgotten piece of cardio equipment," said Debra. "We are showing people how to use it and how to appreciate it for what it is: The best piece of cardio/strength equipment that there is. Also, people are smarter and they want a full-body workout. We work every muscle in every stroke for the entire duration of a row class ... spinning can't make the same claim!"

Debra expects that rowing will continue to grow in popularity.

"We are bringing in new people all the time. Classes have gotten more and more popular as people have gotten more exposed to rowing and have worked their way up to more frequent visits," said Debra. "[At Row House] we cater to rowers and newbies alike and create an environment where they both breed off of each other. It's a true experience."

GET READY TO ROW

If you're trying rowing out on your own and not at a specialized studio, it's important to first be comfortable with proper rowing technique so that you avoid injury. The seat moves and your feet are tied to it, and rowing is a continuous motion.

- 1. Grab the handle while sitting in an upright position, slightly leaning back with your legs straight. The handle should be pulled back so that it's just above your belly button. This is the "finish" position of a stroke.
- **2.** To start the next stroke, extend your arms, pivot forward slightly (from the hips), and then bring your butt forward by bending your knees (move toward the machine).
- **3.** With your arms still extended, you will reach the "start" position when your chest is a couple of inches from your knees.
- **4.** Start the next stroke by pushing back through your heels as hard as you can.
- **5.** Just before your legs are fully extended, pivot from your hips to a slight lean (80 degrees) and then pull your arms back so that the handle is just above
- **6.** Transition right away into the next stroke.

your belly button.

7. Remember each stroke starts with the legs, the back follows, then the arms. Legs, back, arms.

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Staying fit during pregnancy is not the easiest. Some women have it harder than others, and working out seems more like a chore and a struggle than something to look forward to. For me, pregnancy has been more than hard. It has been a constant battle and I have been extremely sick throughout much of it. In fact, naps have been part of my schedule just so I can make it through the day.

Still, no matter how hard it has been, exercise is recommended by doctors for pregnant mothers— even for someone as sick as me. This is why I make it a point to go to the gym four to six times a week. During my first trimester, I was able to get to the gym five to six times a week, but now in my second trimester it has been more like four to five times a week.

Why is exercise so important? Working out gives you a boost of energy when you're exhausted, helps you sleep better, alleviates pregnancy pain, prepares you for childbirth, reduces stress and lifts your spirits. Exercising while pregnant will also make it easier for any woman to get back into shape after her child is born.

For best results, it is important to work out accordingly to your fitness level. Women who have never worked out before should only engage in walking, swimming and prenatal yoga. Ladies who worked out before, but not regularly, should do the same and can

PRENATAL FITNESS

also add in resistance band training. Anyone who works out on a regular basis like myself can do the same workouts they do normally, but in moderation. Weight should be reduced 30 to 50 percent in the second and third trimester, until eventually no weights are used closer to the delivery date. All core and ab workouts should be stopped at the 12-week mark.

Pregnancy can be a perfect time to learn how to diet in moderation. Almost every woman experiences heartburn during the second and third trimester. As the baby grows it becomes harder to breathe, leaving very little room in your stomach. You do not need to adjust your calorie intake or eat more during the first and second trimester. But you will need to add 200 to 300 calories extra a day during your third trimester to accommodate the growing baby inside you. If you are having twins (or more!), that should be adjusted by recommendations from your doctor.

So why do I say pregnancy is a perfect time to learn how to diet? As you know with heartburn and any other digestive discomfort, small proportioned meals are very important to reduce your pain. Eating every two to three hours helps alleviate the nausea and discomfort, so it's a great habit to learn during pregnancy, as well as afterward. Eating healthy is not only important for you, but the baby as well. Nutrient intake by the mother directly affects the overall growth and health of the baby. A solid source of protein is crucial for maintaining optimum energy levels and maintaining strength. I recommend eating protein in every meal. Because eating has been difficult at times for me due to discomfort and acid reflux, I rely primarily on plain food for my nutrition.

What exactly should you eat during pregnancy? A balanced diet rich in quality protein, complex carbohydrates and healthy fats is ideal. Sound

familiar? That's right- the typical fitness diet is perfect. Some good choices include lean meats, leafy greens, broccoli, bananas, oranges, dried fruit, whole-grain breads, oatmeal, fortified breakfast cereals. dried beans and lentils, nuts and nut butters and nonfat milk. Soft cheese is off limits, but cheeses like mozzarella and cheddar can help keep your calcium intake up and are high in protein when having a hard time digesting protein, like myself. Eggs also have so many nutrients that pregnant women need. Finally, if you're a vegetarian, soy foods are great to ensure you still get enough protein.

It is a little more unconventional for typical expectant mothers, but protein powders are also great for protein consumption- especially when you're unable to eat due to stomach issues. During my pregnancy, I have been using MHP's protein supplements on a daily basis. I take Maximum Whey Vanilla Milkshake in the morning, Probolic-SR chocolate after my workout and at bedtime, and both the Fit & Lean Protein Pudding and Protein Brownies as snacks. These help me overcome my cravings for sweets, while providing needed protein and healthy nutrition.

Remember, everyone has struggles in life and even if you cannot work out as much as you want, you still can choose to eat healthy. Being healthy is not just about going to the gym; it is how you take care of your body. What better time to start than when you are carrying a baby? It is the hardest time to start for the simple reason that you will not see immediate results, but it is during this time that you learn what dedication and good habits can do for you. And you'll see the results when you deliver a healthy baby!

What follows below is a basic three days per week program that anyone can use to stay fit, strong and healthy.

DAY 1 - SHOULDERS AND BACK Shoulder Press -4 sets x 20-15 reps

One-Arm Dumbbell Rows -3 sets x 20-15 reps Bent-Over Lateral Raises -

4 Sets x 20-15 reps

DAY 2 BACK AND ARMS
Lat Pulldowns 4 sets x 20-15 reps
Triceps Pushdowns 3 sets x 30-20 reps

One-Arm Cable or Band Curls - 3 sets x 30-20 reps

DAY 3 - LEGS
Squats 5 sets x 20-15 reps

Lunges Off Ball -4 sets x 20-15 reps

Reverse Lunges Off Ball – 4 sets x 20-15 reps









DAY 1 - SHOULDERS AND BACK

One-Arm Dumbbell Rows >>





Lat Pulldowns

DAY 2 - BACK AND ARMS

One-Arm Cable or Band Curls





Lunge off Ball and Reverse Lunge off Ball



Christina Vargas is an IFBB Bikini Pro and MHPsponsored athlete. To find out more, visit MHPSTRONG.com or follow her on Facebook.









DAY 3 - LEGS

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BY DANIEL GWARTNEY, M.D.

MELATONIN & **SEROTONIN** (5-HT) Enhance Weight Loss and Brown Fat

Mention melatonin or serotonin, and most people think of sleep aids or depressed people. Wow, what a buzzkill. However, these two metabolites of the amino acid tryptophan are involved with a host of neuroregulatory pathways that maintain normal, and likely optimal, function. Most people have heard of the association between missing sleep or not sleeping enough (or too much), and obesity. Certain antidepressants are associated with weight loss, and selective serotonin reuptake inhibitor (SSRI) drugs have or are currently being used with some success as weight-loss drugs.1 It is time these two received recognition for their role in weight management and fat loss.

Serotonin is a neurotransmitter, sometimes called 5-HT (5-hydroxytryptamine), that supports a positive mood. There are at least seven different receptor classes (with subclasses of each), so when receptor subclass-specific effects are impacted by drugs, unintended consequences may arise. Serotonin also acts on several pathways related to energy balance, located in the hypothalamus.² These pathways affect appetite, metabolic rate, activity and connect to brown fat. Brown fat is not the more familiar "white fat" that stores fat for later use as energy; rather, it is a thermogenic tissue that burns calories (sugars and fatty acids), wasting much of the energy as heat. A considerable amount of effort is being put forth by the pharmaceutical industry to create drugs that can increase brown fat mass, and/or activity. Recently, it has been discovered that "white fat" precursor cells can develop brown fat traits in the right conditions, creating "beige fat." Serotonin-related drugs may be one class of drugs that fill the bill.

SSRIs AND WEIGHT LOSS

Selective serotonin reuptake inhibitor antidepressants have been used for some time. Contrary to other antidepressants, which have been associated with weight gain, SSRIs have been reported to be associated with weight loss-though individual experiences vary widely. This effect is most consistent with the drug fluoxetine (Prozac), though people should be aware that significant side effects are common in this class of drug. This observation of weight loss led to the development of weight-loss drugs that target specific 5-HT receptors, or stimulate the release of serotonin- specifically fenfluramine, dexfenfluramine and sibutramine.

Melatonin has long been used to adjust to jet lag, and combat insomnia. However, there are numerous other functions to this hormone produced in the pineal gland, a tiny gland in the "ancient" part of the brain. Among these other functions, based on animal study data, melatonin plays a role in the development of brown fat, even beige fat. The effect is most apparent in animals that hibernate, as they develop less brown fat if the pineal gland is removed shortly after birth. Even in larger animals that are not hibernators, melatonin production by the mother ewe (a female sheep) regulates the brown fat of its lambs during pregnancy and the effect persists past the birth.4 Those planning a pregnancy, or currently pregnant, need to consider the importance of sleep and a relaxing environment for the health of the unborn child.

MANIPULATING BROWN FAT

In a review on brown fat and ways to manipulate it to treat obesity, melatonin figured prominently. It is reported that cold and longer nights increase melatonin- signs of the oncoming change of seasons to colder weather, and the need to protect the body against falling temperatures. Injecting melatonin into the hypothalamus increased brown fat by 59 percent in one animal study, with the effect causing an increase in norepinephrine release in the nerves communicating with brown fat. When injected under the skin, which would be similar to taking melatonin in a tablet, this increase in brown fat mass was not present. However, brown fat also has receptors for melatonin, suggesting that taking a tablet might affect brown fat activity. The changes are varied in the tissue studies reported, but support a net increase in brown fat activity. Increased activity of the brown fat cells can result in oxidative damage, and melatonin has been shown to have direct protective effects in the mitochondria. supporting fat burning by protecting against the damage that results from an accelerated metabolism.^{3,5} The authors conclude that section of the review noting that melatonin (based on animal studies) could combat obesity, and potentially help against type 2 diabetes, by reducing chronic inflammation, bodyweight and increasing "non-shivering thermogenesis."3

Even more, melatonin has been shown to reduce the differentiation of "white fat," which means that fewer white fat cells are created over time. Remember, white fat is the storage form of fat. Melatonin also may promote "browning" of white fat, where the storage function is switched to a thermogenic function- one of the more promising directions in weight management.³ It is important to note that though many of the benefits of melatonin occur in the body, not the brain, it is the role of melatonin in the hypothalamus that activates the brown fat activity. Taking a tablet or two of melatonin may aid in the peripheral effects, but the complete benefit profile of melatonin requires pineal secretion. This means that a calm, dark, preferably cool environment should be present as you relax into and maintain sleep.

TRYPTOPHAN AND 5-HTP

The serotoninergic pathways can be supported by the consumption of tryptophan, or its immediate metabolite, 5-HTP (5-hydroxytrytopan).6 Both serve as precursors to serotonin and melatonin. In fact, tryptophan was used successfully as a sleep aid for years until a rare inflammatory disorder was associated with products produced using a technique that contained an adulterant. As tryptophan is an amino acid, most athletes assume they do not need to worry about tryptophan. However, it competes with the branchedchain amino acids (BCAAs)- for example, leucine, isoleucine and valine- as well as tyrosine and phenylalanine.7 It is

"WHITE FAT" PRECURSOR CELLS CAN DEVELOP BROWN FAT TRAITS IN THE RIGHT CONDITIONS. **CREATING "BEIGE FAT." SEROTONIN-RELATED** DRUGS MAY BE ONE CLASS OF DRUGS THAT FILL THE BILL.

possible that those who consume high BCAA content diets may have a relative deficiency of tryptophan in the diet.

Both tryptophan and 5-HTP have been reported to improve sleep onset. However, have they been shown to have weightloss effects acting as serotonin precursors? Well, enough so that many "obesity specialists" recommend a 5-HTP/ carbidopa combination to complement phentermine (a stimulant drug) for their patients.8 Carbidopa prevents the conversion of 5-HTP to 5-HT before it gets to the brain.9 In the report, one case was described where a patient lost 24 percent of initial bodyweight in six months using the 5-HTP/ carbidopa combination without phentermine.

Of course, tryptophan and 5-HTP are typically taken as dietary supplements. So, it is gratifying to see published trials using randomized subjects. 5-HTP, taken at a modest dose of 900 milligrams per day, resulted in significant weight loss compared to the placebo group in a setting of a recommended caloric quideline, or eating ad lib (without restrictions). 10 Further, there was a reduction in carbohydrate intake and reported earlier satiety (feeling full when eating). In type 2 diabetics, who are reported to have decreased brain serotonin activity, 5-HTP supplementation (750 mg/day) with no caloric restrictions resulted in weight loss, and reduced carbohydrate and fat intake.11 Clearly, there is value to supplementing the diet to support serotonin and melatonin production, and availability for people seeking to lose weight.

ONE CASE WAS DESCRIBED WHERE A PATIENT LOST 24 PERCENT OF INITIAL BODYWEIGHT IN SIX MONTHS USING THE 5-HTP/CARBIDOPA COMBINATION WITHOUT PHENTERMINE.

HEALTHY BODY AND A GOOD NIGHT'S SLEEP

The body is designed to function autonomously (without direction) when it is healthy. Part of good health is supporting the mass and function of healthy tissue (e.g., skeletal muscle, brown fat). When the serotonin pathways are active, they can aid not only in reducing excess calorie intake, but also stimulate brown fat activity. Melatonin is involved in a myriad of functions, but even before birth, it plays a role in the creation of brown and beige fat. These thermogenic fats, through the actions of uncoupling protein that separate energy production from calorie burning, can aid greatly in fat loss and maintaining a lean physique. Brown fat is designed to do what people try to accomplish with ephedrine/caffeine or DNP. Though both serotonin and melatonin can be supplemented through increasing tryptophan or 5-HTP, as well as taking melatonin orally, the actions at specific sites in the brain are key to gaining the complete benefits. Part of accomplishing this involves developing good sleep hygieneregular and sufficient sleep times, avoiding bright lights prior to sleep and maintaining a quiet and cool room.

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Wakame Seaweed (Fucoxanthin) Burns Fat!

There are foods that most of us are never exposed to due to cultural or geographic limitations. When a food is consumed only by people in a certain region or culture, it allows researchers to see if different health aspects are present. It does not mean that the food, or cultural practice, causes the difference; just that there might be something present to look at more closely.

Wakame is called "brown seaweed" in the United States, and is a staple food ingredient in many Southeastern Asian regions. Though no single factor accounts for the difference, it is clear that the Western diet- you know the one ... cheeseburger, fries and a large diet soda- has played a role in the prevalence of obesity in the United States. Asian cultures avoided the obesity "contagion" until the United States was kind enough to export fast food.

Analysis of wakame revealed a carotenoid (the same class of chemical as vitamin A, astaxanthin, beta-carotene, etc.) called fucoxanthin that has been shown to affect a number of responses in animal studies, that suggest it may be an effective fat-loss agent for humans. Two recent reviews on fucoxanthin describe many of these effects.12 Again, much of this relies on animal or "test tube" studies.

Fucoxanthin has repeatedly been shown to prevent or reduce the fat gain of rodents placed on high-fat diets; reduce "fatty liver," which is associated with insulin resistance and metabolic syndrome; improve insulin sensitivity; reduce inflammation in fat tissue; lower inflammatory cytokine (messenger signals) release from fat; increase enzymes associated with fat burning; and increase UCP-1 in white fat, which causes the fat cell to "waste" fat calories as heat. This is sometimes referred to as "beige fat," as white fat (which normally stores fat) acts like brown fat, which burns fatty acids and glucose to generate heat. All of these mechanisms are separate avenues of research for fat-loss drugs.

A pharmacokinetic study reported fucoxanthin is converted into the presumably active metabolite fucoxanthinol by intestinal and liver cells, reaching a maximal concentration in blood at four hours postingestion, with a seven-hour half-life.3 This is different from the rodent results, so it does emphasize the need for further human trials before any safety, efficacy and dosing recommendations can be given. Only a single human trial published in 2010 has been reported, though the findings were very promising.⁵ Among obese non-diabetic women, some with fatty liver disease (NASH), supplementation with a pomegranate oil and brown seaweed extract containing 2.4 milligrams of fucoxanthin was associated with an average loss of 11 pounds in 16 weeks, with significant losses in body and liver fat; liver enzymes and inflammatory markers were also lower. Further, resting energy expenditure was higher in those receiving the fucoxanthin supplement.

Given its role as a traditional food ingredient, fucoxanthin appears to be a product that can be reasonably included in a healthy person's diet if they wish to try to receive the benefits suggested by the existing literature. Based upon the rodent pharmacokinetic data, it appears that fucoxanthin's metabolites may accumulate with regular use, so it may not be necessary to use high doses, though the results may take weeks to months to be realized.⁴ ■

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FitRxCoolDOWN / ULTIMATE IN NUTRITION

• BY MARIE SPANO, MS, RD, CSCS, CSSD

THE RED MEAT DILEMMA:



Processed meat causes colorectal cancer and is associated with an increased risk of developing stomach cancer. Red meat probably increases risk of cancer and is most closely associated with an increased risk of colorectal, pancreatic and prostate cancer.

This news, from a report by the International Agency for Research on Cancer (IARC), a branch of the World Health Organization (WHO), created a media circus with vegetarians and meat lovers throwing nasty virtual punches while gritting their teeth and madly typing away on their keyboards. Steer clear of the emotional tug-of-wars attempting to steer you to one side of the meat-eating spectrum or the other, and you'll find out how this study fits into your risk of developing cancer.

Processed meat has been salted, cured, fermented, smoked or been through other processes used to preserve the meat and enhance flavor. Hot dogs, sausages, corn beef, beef jerky and canned meat are all examples of processed meat. Processed meats may also include other meats or meat byproducts such as blood.

Red meat is unprocessed mammalian muscle meat—beef, pork, veal, lamb, mutton, horse or goat meat, including minced or frozen meat. Red meat is usually consumed cooked

The Study

The IARC (part of the World Health Organization, aka WHO) Working Group looked at more than 800 epidemiological studies on processed meat, red meat and cancer from many countries with diverse ethnicities and diets. "They relied on the strongest population-based studies with the best designs for their evaluation," states Alice G. Bender, MS, RDN, associate director of nutrition programs, American Institute for Cancer Research (AICR).

No study can completely rule out the possibility that other dietary factors associated with diets high in processed and red meat contribute to colorectal cancer. However, the large amount of data and consistent associations of colorectal cancer with consumption of processed meat across studies in different populations means it is unlikely that chance, bias and confounding variables influenced the results of this report. "Confounding factors known for links to cancer risk include BMI, smoking, physical activity, age, gender, alcohol use, NSAID use; [NSAIDs are nonsteroidal anti-inflammatories such as ibuprofen] while dietary fiber and dairy products are linked with lower risk," states Karen Collins, MS, RDN, CDN, FAND, nutrition advisor to the American Institute for Cancer Research.

Though the IARC report may seem like earth shattering news, scientists from the World Cancer Research Fund (WCRF), an international nonprofit charity that includes several organizations including the AICR, write a number of reports as part of an ongoing initiative called the Continuous Update Project (CUP). "CUP reports are continuously updated and their conclusions on processed meat and colorectal cancer are based on cell studies, animal research, short-term human clinical studies of biomarkers and adenomas (benign polyps that are the starting point of the vast majority of colorectal cancers) AND longer-term observational population studies," says Collins. For several

years, WCRF has issued recommendations suggesting consumers avoid processed meat and limit intake of red meat to 11 ounces or less per week.

IARC placed processed meat into Group 1- it is cancer causing. Red meat was placed in Group 2A- it probably causes cancer. "For red meat, IARC said the evidence was strong, but not as consistent," states Bender. Several welldesigned studies showed no association between red meat and colorectal cancer, which suggests that other diet and lifestyle factors could be responsible for the association between recomeat and colorectal cancer. However, the Group 2A classification is based on strong mechanistic evidence for the association between red meat and cancer. Mechanistic evidence refers to mechanisms that support the development of cancer and in this case refers to a statistically significant association between red or processed meat consumption and lesions that may be cancerous as well as changes in markers of oxidative stress- suggesting red and processed meat cause damage to the body beyond which the body's antioxidant system can repair. Also, several known or suspected carcinogens (cancer-causing compounds) are formed in meat when it is cooked and also formed in the colon when we eat processed meat or red meat. The IARC report mentions three of these compounds: N-nitroso compounds (NOC), heterocyclic aromatic amines (HAA) and polycyclic aromatic hydrocarbons (PAH).

Heme iron in processed and red meat leads to the formation of NOC in the colon. In addition, nitrites, amines and amides are precursors to the formation of NOCs in the body. In fact, an estimated 45-75 percent of our total exposure to NOCs comes from our body's production of these compounds. NOCs, as well as PAHs, are also formed when meat is processed, including curing and smoking. HAAs and PAHs are formed when meat is cooked. Cooking meat on high temperatures as done during grilling, barbecuing and frying leads the greatest production of these chemicals. When fat and juices from meat drip onto fire, resulting in flames, PAHs develop and adhere to the meat like shellac. HAAs are formed when amino acids, sugars and creatine react at high temperatures. HAAs and PAHs must be metabolized by specific enzymes (a process called bioactivation) before they can damage DNA. Yet the activity of these enzymes varies between people and therefore, one's risk of developing cancer due to HAA and PAH exposure depends on how they metabolize these compounds.

Though considered mechanistic evidence for the relationship between processed and red meat and the development of cancer, these compounds are not unique to processed and red meat. NOCs are found in smoked fish, the malt in beer and whiskey production, pickled vegetables and foods stored under humidity leading to fungi that generate nitrosamines. PAHs are also found in air pollution. In addition, PAHs and HAAs are formed in fish and poultry (chicken, turkey, ducks, geese) cooked over high temperatures.

Is There a Difference Between Grass-Fed Beef Jerky and a Hot Dog?

Natural, uncured bacon, sausage and other processed meats that do not contain added nitrites or nitrates are still

ULTIMATE IN NUTRITION

considered processed meats. Though it's possible these are safer choices, they are still relatively new to the market and therefore we do not know if processing meat with natural sources of nitrates, like those from celery, act differently in the body than traditionally processed nitrate-preserved meat. Grains and leafy vegetables are the main source of nitrates, which are reduced to nitrites by bacteria in the mouth. However, vitamins C and E as well as plant-based compounds called polyphenols, found in fruits and vegetables, inhibit your body's production of NOCs. Some meat processors add vitamin C during processing, yet it isn't clear if added vitamin C has any affect on NOC formation in the gut after consuming red or processed meat.

Understanding Your Risk

Along with processed meats, smoking, UV light (which includes the LED lights used to set gel nails), alcohol and mineral oil (found in many lotions and beauty products) are all Group 1 carcinogens. "IARC's classifications reflect the strength of evidence behind them, not the level of risk," states Bender. Just because a compound is carcinogenic, this does not mean it causes cancer "at all times, under all circumstances. Some may only cause cancer in people who have a certain genetic makeup. Some of these agents may lead to cancer after only a very small exposure, while others might require intense exposure over many years," according to the American Cancer Society. Many factors influence the development of cancer including age, gender, family history and other lifestyle factors (tobacco and alcohol use, weight, diet, physical activity).

Risk of colon cancer with consumption of processed meat over the course of a lifetime is about 5 percent. However, one study cited in the IARC report found that small amounts of processed meats eaten daily-50 grams or one small hot dog-increases risk for colorectal cancer by 18 percent (to a total of about 6 percent) compared to not eating processed meat. "In some studies, participants who eat diets highest in red/processed meat experience a risk for colon cancer nearly double that of those eating the lowest amounts of red/ processed meat," says Bender. How does this compare to smoking? "According to the CDC, smoking cigarettes multiplies a person's risk for cancer by as much as 20 times when compared to a non-smoker. And smoking increases the risk of many cancers, and increases the risk of dying from cancer," states Bender.

Decreasing Your Risk of Colorectal Cancer

Though risk of dying from colorectal cancer seems small compared to deaths due to smoking, there are about 2.5 cases of colorectal cancer for each death from this disease. "Colorectal cancer is the third most common cancer in the U.S., and we can prevent about HALF of these cases through the combination of five lifestyle choices: 1) reach and maintain a healthy weight, 2) make physical activity a daily

habit by aiming for at least 30 minutes each day, 3) drink alcohol only in moderation (if at all), 4) fill up on fiber-rich foods, 5) limit red meat and avoid processed meat," states Collins. Screening for colorectal cancer is also very important since it will detect cancer early so treatment can begin right away.

The AICR recommends avoiding all processed meat and limiting red meat intake to a more liberal amount than suggested by the WCRF- 18 oz. of cooked red meat per week.

'Since no safe level of processed meat consumption has been identified, the choice of how to use this information is individual. For someone who wants to know that they are doing all they can to reduce their risk of this cancer, then keeping use to very infrequent occasions is the answer. For someone who has been eating bacon, hot dogs, sausage and other processed meats on a daily basis, then reducing consumption is important, even if they aren't willing to completely give up these choices," says Collins. Consider substituting other sources of protein for processed meats including beans, peas, eggs, cottage cheese, tofu and tempeh. Eat fresh sliced chicken or turkey instead of deli meats and fresh pork belly or fresh pork over bacon. Vegetarian sausages can take the place of bacon, chorizo or salami, while beans can replace sausage in casseroles, soups and other dishes. Newer plant-based meat alternatives offer a wide range of textures and tastes, but they do not taste anything like traditional processed or red meat.

You can also prepare red meat so it contains fewer potential carcinogens. Leaner cuts of red meat including loin and round drop less fat into flames, leading to less smoke and therefore fewer PAHs. Choose low, slow and moist cooking methods, such as meat marinated and placed in a slow cooker, over high, dry heat. Low temperatures will decrease the formation of HAAs.

It is important to keep in mind that "avoiding processed meat and consuming red meat only in moderation is one important part of reducing risk of colorectal cancer-but this alone does not define healthy eating," states Collins. According to a study published in the Journal of the American Medical Association, eating a primarily plant-based diet that includes fish may be your best bet for preventing colorectal cancer. In this study, pesco-vegetariansvegetarians who also include fish in their diet-had a 43 percent lower risk of colorectal cancer than non-vegetarians, while milk and egg eating vegetarians had an 18 percent lower risk, and vegans- those who consume no animal foods- had a 16 percent lower risk. Researchers believe fish may provide an additional benefit due to its high content of the omega-3 fatty acids EPA and DHA, which are unique to fish and algae.

The IARC report reiterates advice that the World Cancer Research Fund and health experts have been recommending for years- avoid processed meat and limit your consumption of red meat. Now it's up to you as a consumer to decide what you plan on doing with this information.

International Agency for Research on Cancer Group 1: Carcinogenic to humans. http://www.cancer.org/cancer/cancercauses/othercarcinogens/generalinformationaboutcarcinogens/known-and-probable-human-

International Agency for Research on Cancer Group 1: Carcinogenic to humans. http://www.cancer.org/cancer/cancercauses/otnercarcinogenis/generalinionianalin

BUILDING STRONGER BONES

The Best Exercises and Nutrition Tips

Exercise and nutrition strategies are often associated with building a leaner, more athletic-looking body. But what about the improved benefits of practicing regular exercise and nutritional habits on non-physique related measures such as bone health?

In this article, we're going to quickly explore what the research tells us on exercise, nutrition and supplementation for building and maintaining healthy and strong bones.

EXERCISE FOR BONE HEALTH

There is a substantial body of evidence indicating that bone mass can be increased by some exercise programs in adults and the elderly, and attenuate the losses in bone mass associated with aging.1 However, not all exercise modalities have been shown to create positive effects on bone mass. For example, unloaded exercise such as swimming has not shown to have an impact on bone mass, while walking or running has limited positive effects. Not to mention, cycling has been associated with decreases in bone mineral density (BMD) and bone mineral content (BMC) of the thigh, hip and lumbar spine in both female and male cyclists.2

The scientific evidence points to a combination of high-impact (i.e., jumping) and resistance training exercises. Exercise involving high impacts, even a relatively small amount, appears to be the most efficient for



enhancing bone mass. That said, since medical or injury limitations may prevent someone from doing high-impact exercises, regularly using strength training on its own is also a very effective means of improving and maintaining bone strength and health.

In addition to promoting muscle strength and mass, resistance training also effectively increases bone mass (i.e., bone mineral density and content) and bone strength, and may reduce the chance of developing musculoskeletal disorder (e.g., conditions of the bones, muscles, joints and ligaments) such as osteoporosis.^{3,4} Additionally, resistance training may help to slow down or even reverse the loss of bone mass in people with osteoporosis.⁵

It's important for women to note that, when it comes to maximizing both the health and physique improvement benefits of resistance training, tiny pink dumbbells just aren't the tool for the job. Instead, women benefit from the type of heavy lifting like doing sets in the six to 12 rep range while using a weight load that challenges you within that rep range. Doing this is how you put the *strength* in "strength training."

In other words, the principle of specificity—a universal training principle—dictates that the adaptations to training will be specific to the demands the training puts on the body. So, the way you build stronger bones is by constantly challenging your body to become stronger by gradually using progressively heavier loads.

NUTRITION FOR BONE HEALTH

Adequate nutrition plays an important role in the development and maintenance of bone structures resistant to usual mechanical stresses of daily life and physical activity. And, dietary proteins represent key nutrients for bone health and thereby function in the prevention of osteoporosis, as a multitude of studies point to a positive effect of high protein intake on bone mineral density or content.⁶

Of course, now the question arises: Is a high-protein diet harmful

to your bones?

Put simply, there is no good scientific evidence that a high protein intake per se would be detrimental for bone mass and strength in otherwise healthy individuals. Not only is it based on a myth, it's a completely backwards myth, as not *enough* protein has been repeatedly shown in the research to be deleterious to your bone health.

For example, a 2002 study published in Food and Chemical Toxicology concluded that "excess protein will not harm the skeleton if the calcium intake is adequate," while a review study published in 2003 in The Journal of Nutrition showed that people with chronically low protein consumption were at higher risk for lower bone density and more bone loss.^{7,8}

Additionally, a 1998 study published in Nutrition Reviews worth noting found that protein supplements help elderly folks heal faster from bonerelated injuries. They looked specifically at femoral fractures- the large leg bone that connects with the pelvis to create the hip joint- and found that supplementing with 20 grams of protein a day reduced bone loss and allowed seniors to return home sooner from rehabilitation facilities.9

As you can see, contrary to popular misconception based on cherry picked data and irresponsible media practices, the real danger to your health comes from a low-protein diet. It's bad for your body composition, bone density and metabolism.

SUPPLEMENTATION FOR **BONE HEALTH**

Some evidence shows that calcium supplementation may be beneficial in populations susceptible to osteoporosis.¹⁰ And, some evidence shows that co-supplementation of vitamin D with calcium may help prevent bone loss in athletes susceptible to osteoporosis.¹¹ However,

a 2014 a systematic review of the scientific literature titled, Vitamin D and Calcium: A Systematic Review of Health Outcomes (Update), summarized the body of evidence on the relationship between vitamin D alone or in combination with calcium on selected health outcomes included in their earlier review: primarily those related to bone health, cardiovascular health or cancer outcomes.

In solid agreement with the findings of their original 2009 report, the majority of the findings concerning vitamin D, alone or in combination with calcium, on the health outcomes of interest were inconsistent.12

The authors of this paper concluded that, "It is difficult to make any substantive statements on the basis of the available evidence concerning vitamin D supplementation, calcium intake, or the combination of both nutrients, with the various health outcomes because most of the findings were inconsistent."

CONCLUSION

The focus of this article is on scientifically founded strategies for improving and maintaining healthy and strong bones. That said, most of the best tips for improving both your health and physical appearance are the ones that are too simple to be sexy! Regularly participate in a progressive resistance-training program that fits your current ability. Eat veggies, drink plenty of water, get lots of protein, eat whole foods, minimize refined foods and limit alcohol, And, don't overeat. It doesn't matter how much science comes out. the above will always be legitimate.

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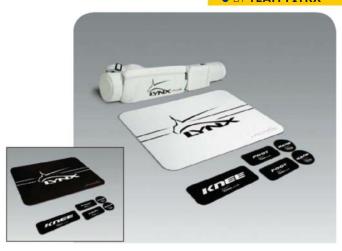
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With the **Lynx Board**, you are training with a carefully tested friction between a plate and a set of pads. The patented friction technology uses your own weight to provide counter-resistance as your body glides in rhythmic precision along the specially engineered surface. As a result of resistance-controlled friction, there is virtually no impact, which makes the training



advantageous for people recovering from injury or those who have chronic joint problems such as osteoarthritis.

You control your movements and your results on the **Lynx Board** by tweaking your training techniques and adjusting the number of sets, repetitions, speed, range of motion and your individual static stabilization. Friction makes the precise control of movement easy to maintain, and range of motion cannot exceed the level of your individual muscular performance. The patented **Lynx Board** surface responds to your bodyweight by increasing the intensity of the workout proportionately to the pressure you exert.

In short, the **Lynx Board** conforms to your fitness level and abilities, and challenges you while giving you the best workout possible.

BUILD YOUR CORE

One of the preeminent developments in fitness in the last decade has been the increased appreciation for core strength and the many benefits that it bestows. The core refers to your back, pelvis and shoulder girdle, the four bones that support the muscles and ligaments in your shoulders. When your core is strong, you have improved functional fitness, with better performance and balance in sports and all activities of daily living. You also are less prone to injuries and suffer fewer aches and pains.

The **Lynx Board** has been scientifically shown to improve your core strength in just a few minutes per day. In a recent study, the **Lynx Board** was found to significantly improve core musculature endurance and strength. Researchers concluded that both static and functional core strength can be improved by training with the **Lynx Board**.

Good core stability is critical to good posture, and provides an excellent foundation for the arm and leg movements that can counter the effects of poor posture and back problems so prevalent in our technology-driven lifestyles. So, if you spend too many hours in front of a computer every day, the **Lynx Board** could be just the relief you need to ease your aches and pains and improve your athletic performance. And remember, if you're too beat to head to the gym after work ... no problem. Just set up the **Lynx Board** in your living room and you're good to go.

For more information, visit lynxfitness.com. ■

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